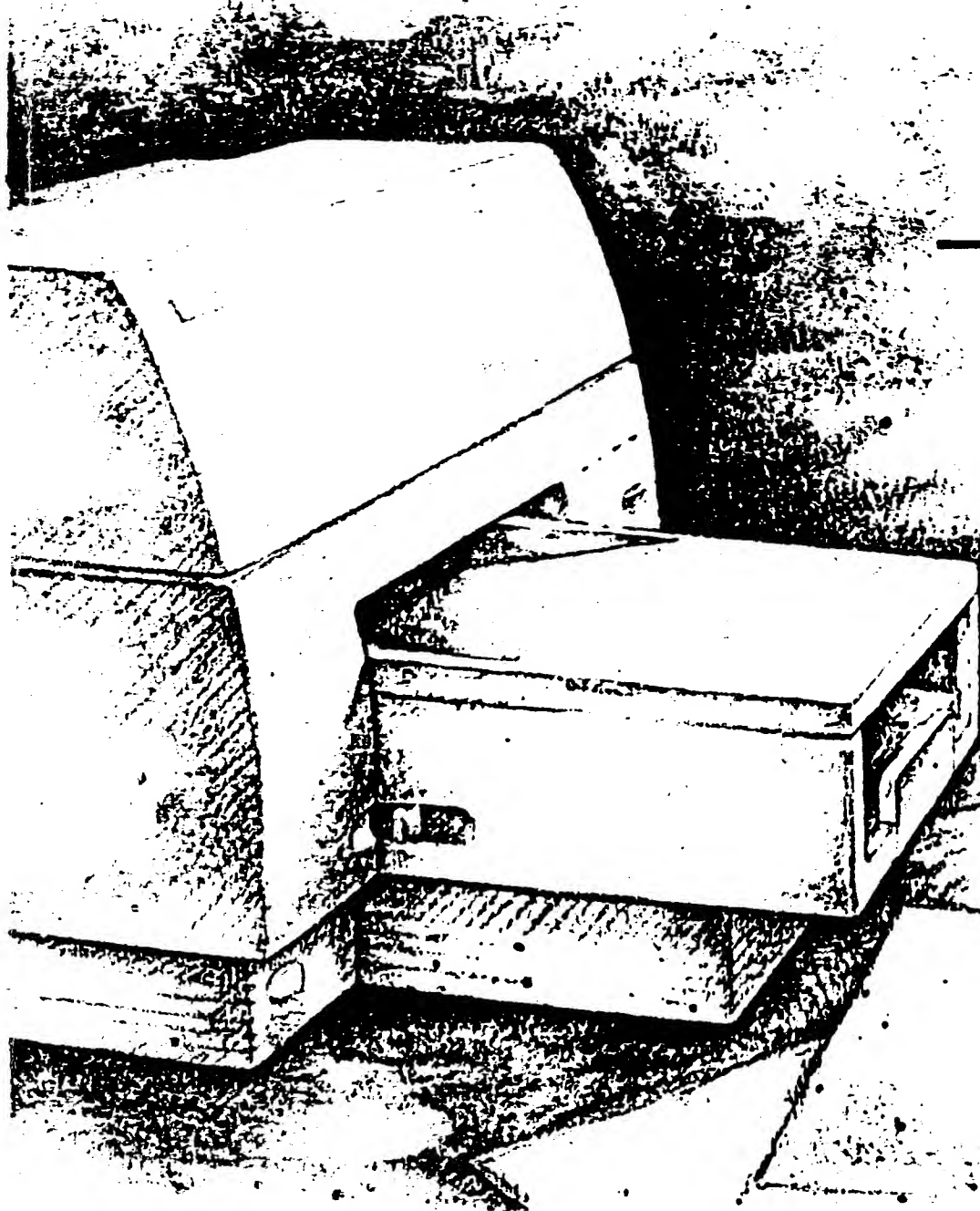


HP DeskJet 1600C and 1600CM Printer User's Guide



© Copyright Hewlett-Packard Company 1995

All rights are reserved. No part of the document may be photocopied, reproduced, or translated to another language without the prior written consent of Hewlett-Packard Company.

Publication number:
C3540-90000
Second Edition.
May, 1995
Printed in U.S.A.

Acknowledgements

CG Times, Courier, CG Omega, Garamond, Letter Gothic, Clarendon Condensed, and Coronet are products of AGFA Compugraphic, a division of Agfa Corporation.

ATM, Adobe®, PostScript®, and the PostScript logo are trademarks of Adobe Systems, Incorporated which may be registered in certain jurisdictions.

TrueType® is a U.S. trademark of Apple Computer, Inc.

MS-DOS® is a registered trademark of Microsoft Corporation.

PANTONE® is PANTONE, Inc.'s check-standard trademark for color and is a registered trademark of PANTONE, Inc.

UNIX is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company Limited.

Notice

The information contained in this document is subject to change without notice and should not be construed as a commitment by the Hewlett-Packard Company.

Hewlett-Packard assumes no responsibility for any errors that may appear in this document nor does it make expressed or implied warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The Hewlett-Packard Company shall not be liable for incidental or consequential damages in connection with, or arising out of the furnishing, performance, or use of this document and the program material which it describes.

Complete product warranty information is given in the Warranty Information booklet.

WARNING

The Warning label calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a Warning label until the indicated conditions are fully understood and met.

CAUTION

The Caution label calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a Caution label until the indicated conditions are fully understood and met.

Regulatory information can be found in the "Technical information" chapter of this User's Guide.

Owner's Information

Printer:

Serial Number:

Date of Purchase:

Place of Purchase:

Address:

Phone Number:

Service Contract Number:

Date of Contract Expiration:

What Do *You* Think of the Printer Documentation?

Please give us your feedback on the quality of the manual in these areas.

	Far Below Expectations	Below Expectations	Meets Expectations	Exceeds Expectations	Far Exceeds Expectations
Information accessibility	1	2	3	4	5
table of contents	1	2	3	4	5
chapter titles	1	2	3	4	5
section headings	1	2	3	4	5
cross references	1	2	3	4	5
index	1	2	3	4	5
Organization	1	2	3	4	5
Completeness	1	2	3	4	5
Accuracy	1	2	3	4	5
Readability	1	2	3	4	5
language usage	1	2	3	4	5
page layout	1	2	3	4	5
Illustrations	1	2	3	4	5

Please give us your feedback on the quality of these instructions.

	Far Below Expectations	Below Expectations	Meets Expectations	Exceeds Expectations	Far Exceeds Expectations	Did Not Use
Getting started	1	2	3	4	5	0
Using media and cartridges	1	2	3	4	5	0
Using printer software	1	2	3	4	5	0
Troubleshooting	1	2	3	4	5	0
Installing printer options	1	2	3	4	5	0
Ordering information	1	2	3	4	5	0

Please tell us which sections you read or looked through.

- ☐ Chapter 1 ☐ Chapter 3 ☐ Chapter 5 ☐ Technical information
☐ Chapter 2 ☐ Chapter 4 ☐ Chapter 6 ☐ Ordering information

Your comments: _____

Name: _____

Company: _____

Address: _____

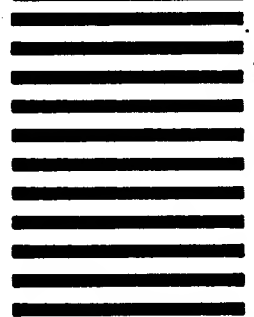
Telephone: _____

Thank you for your help! If you would rather fax this information to us, our fax number is: 1-619-655-5831.
 All comments and suggestions become the property of Hewlett-Packard. 2nd Edition 5/95, manual P/N C3540-90000

FOLD HERE



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 25708 SAN DIEGO CA

POSTAGE WILL BE PAID BY THE ADDRESSEE



**HEWLETT[®]
PACKARD**

**SAN DIEGO PRINTER DIVISION
ATTN: SPR LEARNING PRODUCTS
16399 WEST BERNARDO DRIVE
SAN DIEGO, CA U.S.A. 92127-9989**



User's Guide

HP DeskJet 1600C and 1600CM

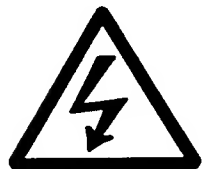
Regarding this document...

Our world is rapidly growing smaller as the needs for global communication become increasingly larger. We at Hewlett-Packard want to provide you with documentation that can be understood globally as well as locally. Our goal is to accommodate a wide audience with easily understood documentation. A language shared by more than one culture challenges this goal with idiomatic differences. While you personally may have chosen a different word or phrase, it is our hope that the terms and expressions in this document none the less are clear and understandable. This is our sincere and best effort at creating documentation that is globally understood and accepted.

Safety symbols



This symbol is placed on the printer where it is necessary for you to refer to the manual in order to understand a hazard.



This symbol is placed on the printer within the area where hazardous voltage is present. Only trained service persons should perform work in this area.

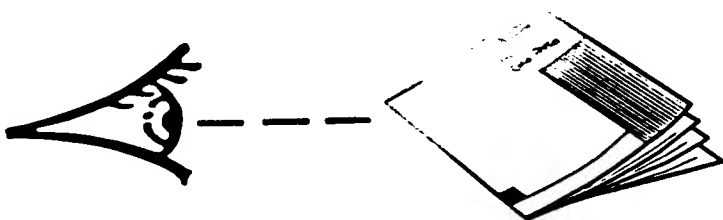


This symbol is placed on the printer within the area where hot surfaces are present. Allow the printer to cool before performing work in this area.

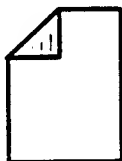


This symbol is placed on the printer within the area where electrostatic discharge (ESD) may occur. ESD can damage the printer's electronic components. Avoid touching electronic components or circuit paths. Use proper grounding devices when circuits are open to outside areas.

Help symbols



This symbol is placed on the printer where it is necessary to refer to the manual to ensure that procedures are completed successfully.



This symbol is located on the printer's input (lower) paper tray and indicates that paper must be positioned with the print side down and top-of-page forward (closest to printer).



This symbol is located on top of the printer at the manual feed slot and indicates that a sheet of paper must be inserted with the printing side facing the front of the printer and the top-of-page down.



This symbol is located on top of the printer at the manual feed slot and indicates that an envelope must be inserted with the print side facing the front of the printer and the stamped corner down.

Contents

1 Getting started

Thank you for purchasing an HP DeskJet printer	1-2
Checklist for setting up your printer	1-3
Unpack the printer	1-4
What's inside the box	1-5
Load the print cartridges	1-6
Install the paper trays	1-8
Install the support tray first	1-9
Install the input tray second	1-10
Install the output tray last	1-11
Load a stack of paper	1-12
Install the optional 500-sheet paper tray	1-14
Connect the power cord	1-14
Turn the printer on	1-15
Print a self test	1-16
Self-test data	1-18
Connect the interface cable	1-20
For PC users connecting to Centronics	1-20
For PC users connecting to Ethernet 802.3	1-21
For PostScript Macintosh users with LocalTalk interface	1-22
For PostScript Macintosh users with EtherTalk interface	1-24
What's next?	1-26
Installing your printer software	1-26
Using the rest of this guide	1-26

Contents

2 Your printer's features

Identify your printer's features	2-2
Front area	2-2
Print cartridge area	2-3
Rear printer area	2-4
Printer features	2-5
ColorSmart technology	2-7
Memory Enhancement technology (MEt)	2-7
Network capabilities	2-8
Using a shared printer	2-8
Multi-platform printing	2-9
Typefaces	2-9
Printer memory	2-10
Printer languages	2-11
HP PJI	2-11
HP PML	2-11
HP PCL 5C	2-11
Adobe PostScript Level 2	2-11
HP-GL/2	2-11
DeskJet 1600C Control Panel	2-12
Status Monitor	2-12
Out-of-ink sensing	2-12

3 Using your printer

Using the front panel	3-2
1: Ready light	3-2
2: Form Feed/Manual Feed light	3-3
3: Check Paper light	3-3
4: Check Print Cartridges light	3-4
5: Front-panel button	3-4
What you need to know about paper	3-5
Loading paper	3-6
Printing on glossy paper	3-9
Printing on transparencies	3-9
Loading transparencies	3-10
Loading envelopes	3-12
Loading label stock	3-13
What you need to know about print cartridges	3-15
Determining ink color (for users with color-vision deficiencies) ...	3-16
Ink-level indicator	3-17

4 Using printer software

Software priority	4-2
Getting to your printer-specific options	4-2
Using the control-panel software	4-3
Trays	4-3
Page Setup	4-3
Print Quality	4-3
Fonts	4-4
Language	4-4
Other Settings	4-4
Using the Windows Status Monitor	4-5

Contents

5 Troubleshooting	
Checklist for printer problems	5-2
Troubleshooting your printer	5-4
Print cartridge problems	5-8
Run the self test	5-8
Manually clear the print cartridge nozzles	5-11
Clear jammed paper	5-13
Maintaining your printer	5-17
Cleaning the inside of the printer	5-18
Getting help	5-19
Returning your printer for service	5-22
Removing the paper trays	5-23
6 Installing printer options	
Installing PostScript upgrade or additional memory	6-2
Technical information	
Regulatory notices	7-2
Declaration of conformity	7-4
Functional specifications	7-5
Ordering information	
How to order HP DeskJet 1600C and 1600CM accessories and supplies ..	8-2
Printer Accessories	8-2
Index	

Getting started

Getting started

Setting up your printer

Thank you for purchasing an HP DeskJet printer

To set up your printer, use the checklist on the next page.

As you perform various tasks in this guide, you will notice an arrow or square at the bottom-right corner of each page. The arrow indicates that the procedure continues on the next page. The square indicates that the procedure has ended.



Procedure continues
on next page



End of procedure



Checklist for setting up your printer

Important

To properly set up your printer, follow the procedures in this guide in the *exact* order shown below (titles of procedures are listed).

		<u>PAGE</u>
___1	Unpack the printer	1-4
___2	Load the print cartridges	1-6
___3	Install the paper trays	1-8
___4	Load a stack of paper	1-12
___5	Install your optional 500-sheet paper tray	1-14
___6	Connect the power cord	1-14
___7	Turn the printer on	1-15
___8	Print a self test	1-16
___9	Connect the interface cable	1-20
___10	Install your printer driver(s)	1-26

Unpack the printer

Carefully unpack and inspect the printer and accessories. Compare the parts you received with those shown on the next page.

If any parts are missing, contact the dealer or HP Sales and Support Office where you purchased the printer. If you received your printer in damaged condition, notify the dealer or HP Sales and Support Office where you purchased the printer. Then file a claim with the carrier.

Save the carton and packing materials in case you ever need to ship your printer. Be sure to check local, state, and national laws governing the disposal of any material associated with this product.

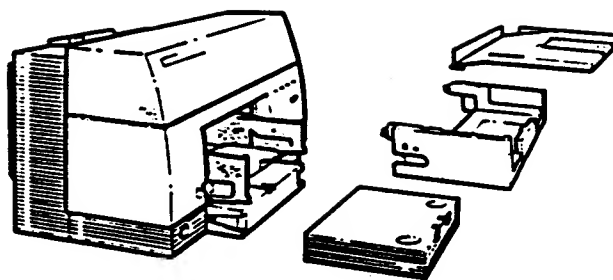
For information on ordering additional supplies, refer to the "Ordering information" chapter of this manual.

Important

An interface cable (required to connect the printer to a computer) is not included with your printer and must be purchased separately. If you want to utilize the HP DeskJet 1600C Control Panel and Windows Status Monitor, you must use a bidirectional (all pins connected) Centronics cable. Refer to the "Ordering information" chapter of this manual or consult your dealer to decide which interface cable you need for your computer.

What's inside the box

HP DeskJet 1600C
or 1600CM Printer
and paper trays



Ordering guide

Paper sampler



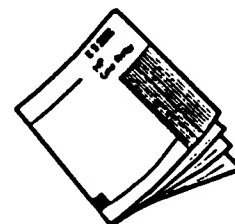
Power cord



Four print cartridges



This HP DeskJet
1600C and 1600CM
User's Guide



Printer software disks
(inside Installation booklets)



JetAdmin and JetPrint network
utilities (1600CM only)



Load the print cartridges

While the printer is on, if a new print cartridge is installed or the top cover opened, the printer automatically performs a calibration procedure. This procedure will last 5 to 15 seconds per new cartridge. Once a print cartridge has been calibrated, the results are stored in the printer's memory until a new cartridge is installed.

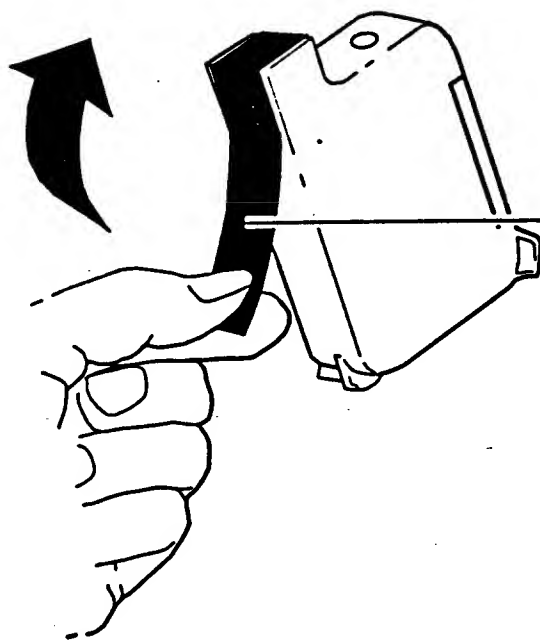
Important

Users with color-vision deficiencies can refer to Chapter 3, page 3-16, for installing print cartridges in the proper color sequence.

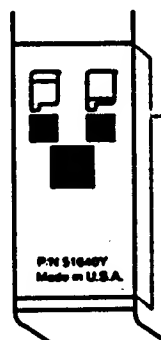
CAUTION

Hold the cartridge by the black areas only. The color of the ink in the print cartridge (shown on the outer edge of the label) must match the color of the dot above the cartridge stall.

1. Remove the print cartridge from the carton.
2. Remove both the green tab and the blue transparent tape from the print cartridge nozzles by pulling on the green tab as shown in the illustration below.



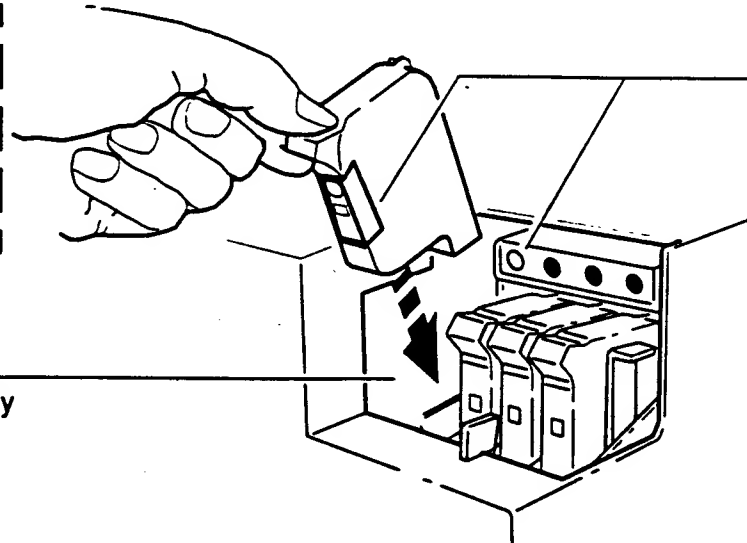
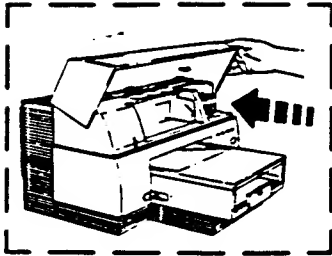
Remove and discard green tab and blue tape.



The colored area around the edge of the label shows you the color of ink in the cartridge.



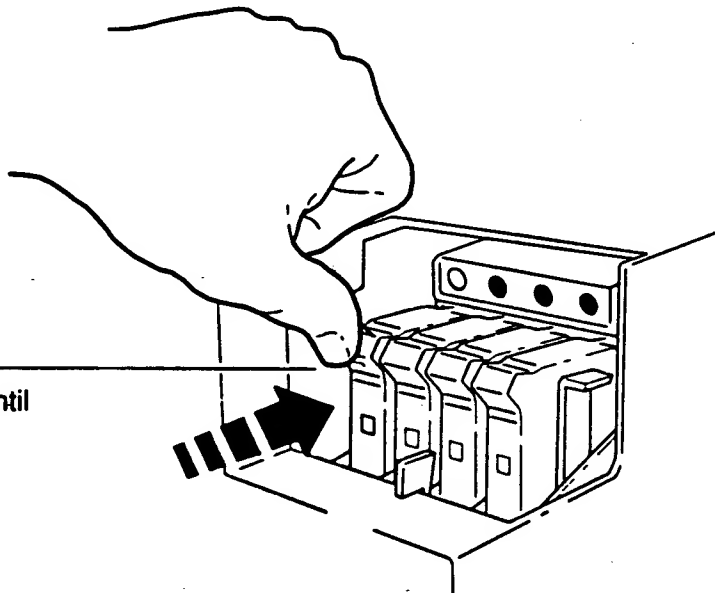
- 3 Raise the top cover and push the correct color print cartridge firmly down into the carriage stall (you may or may not hear a "snap" sound when doing this). The illustration below shows the yellow cartridge going into the yellow stall.



Match the color
of the label to
the dot.

Push print cartridge firmly
down into carriage stall.

- 4 Push the print cartridge forward (toward the dot on the stall) until it is firmly set in place (until the cartridge can go no further). You will hear a snap sound when it is pushed fully forward.

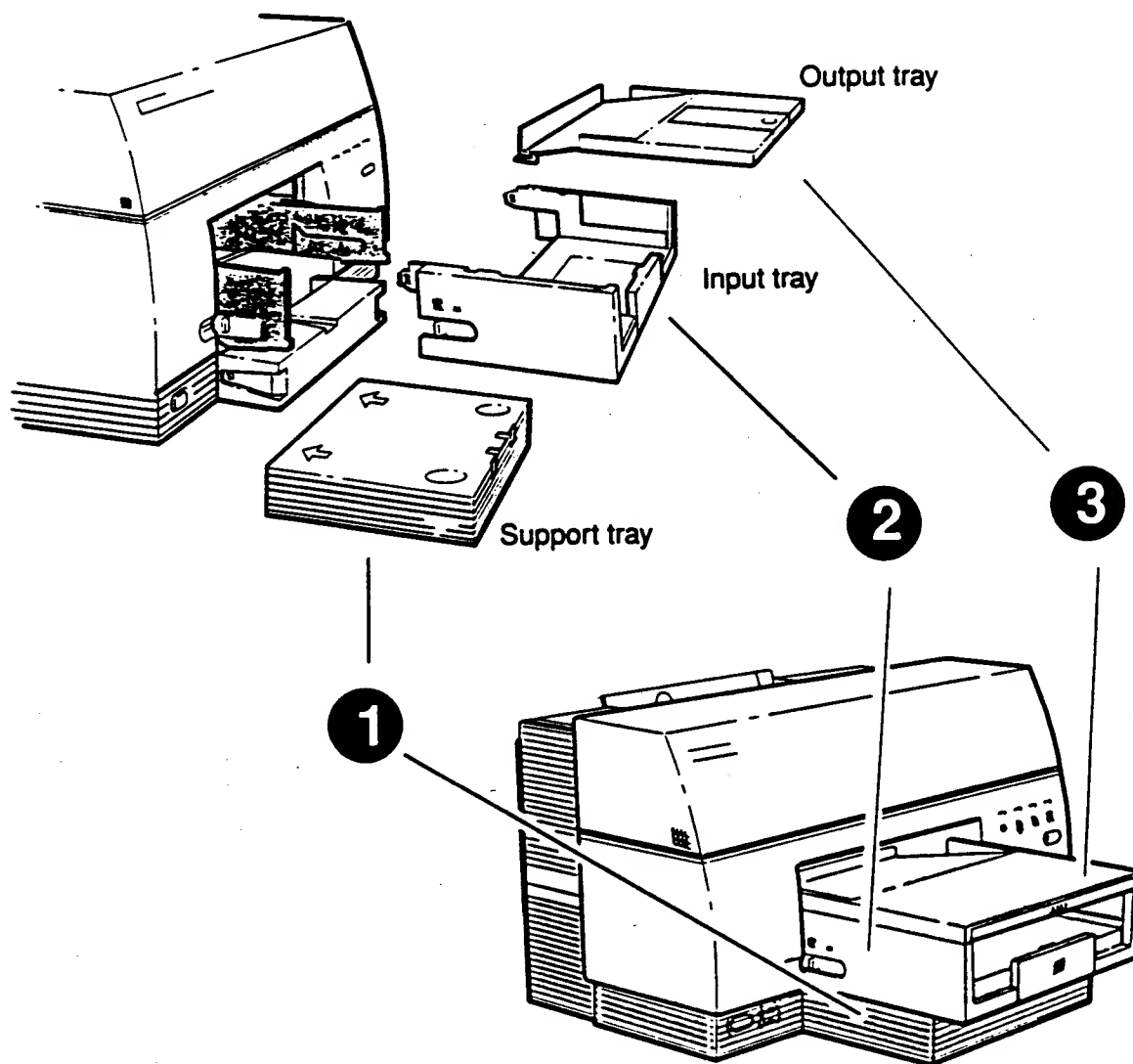


Push forward firmly until
you hear "snap".

- 5 Repeat steps 1 through 4 until all four print cartridges have been installed as shown above.

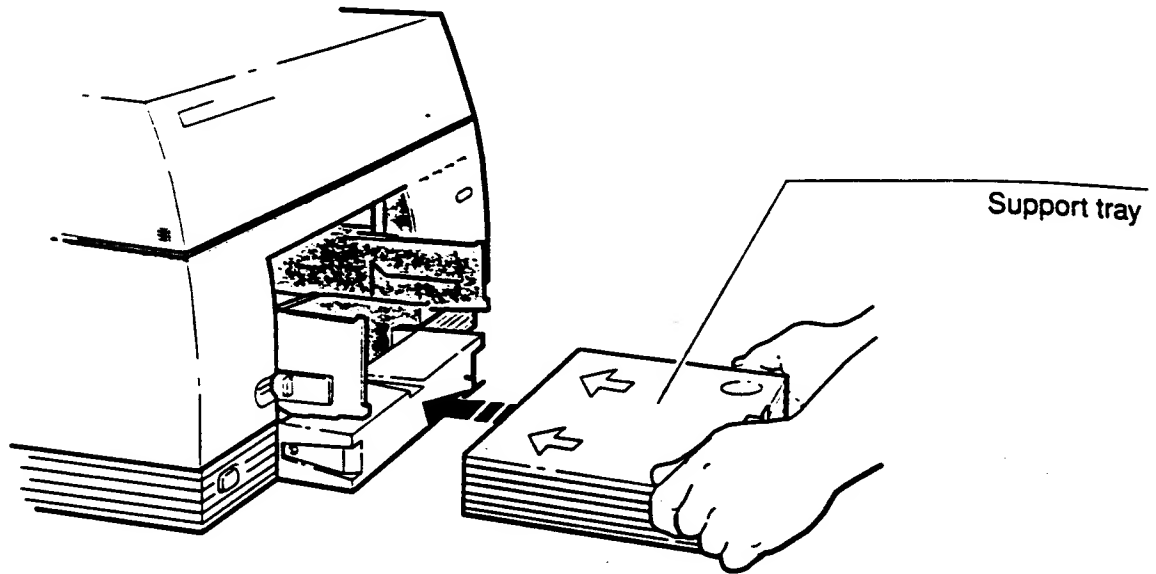
Install the paper trays

There are three parts to the standard paper trays as shown below: the support tray, the input tray, and the output tray.



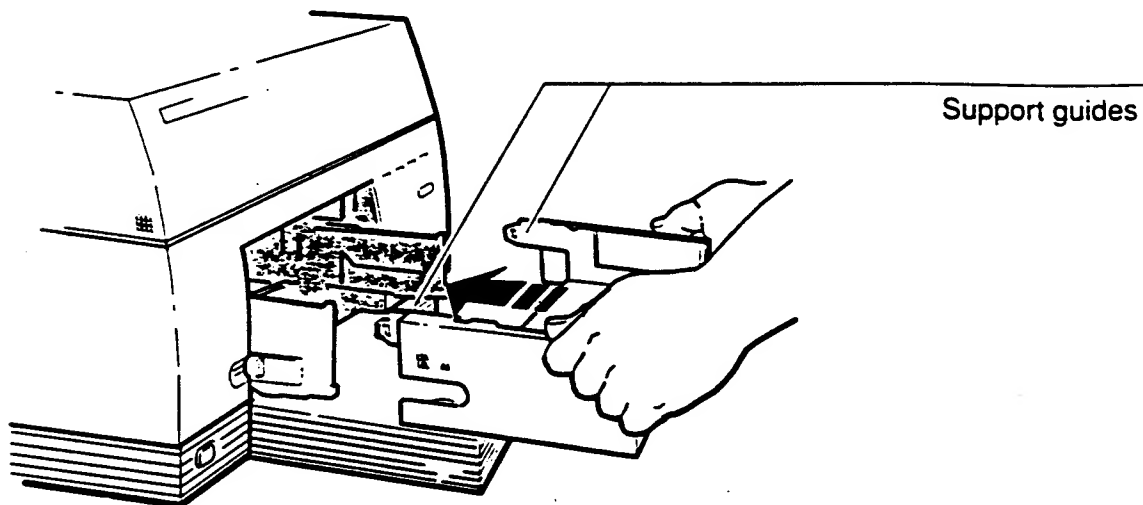
Install the support tray first

1. Connect the support tray onto the printer as shown below. (For positioning, the embossed arrows are on top and pointing towards the printer.)

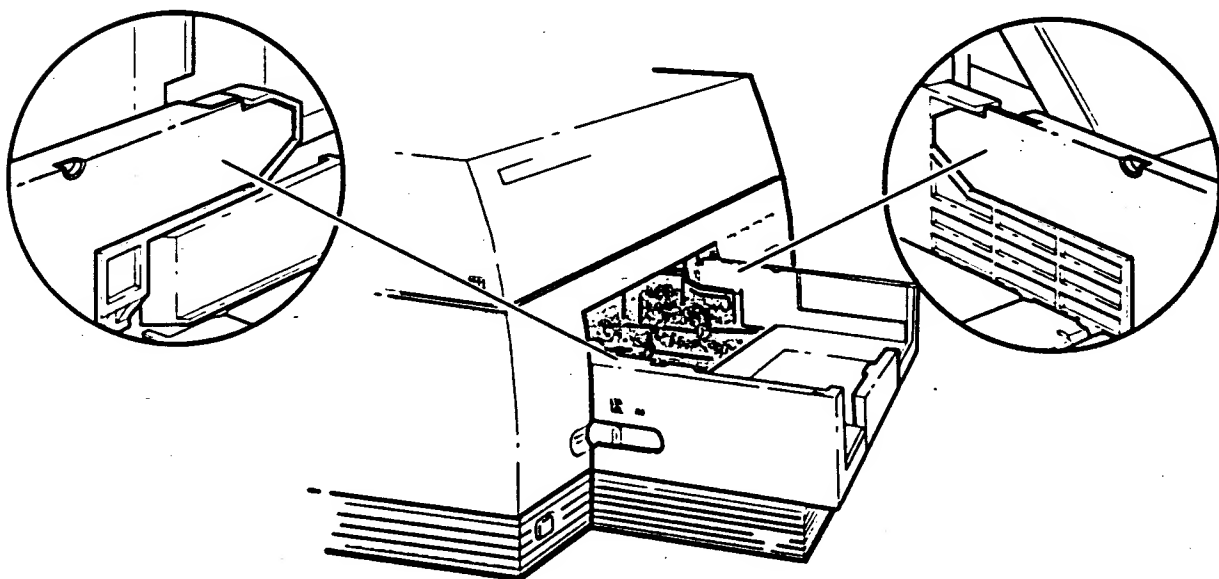


Install the input tray second

1. Hold the input paper tray so that the tray guides are pointing towards the front of the printer.

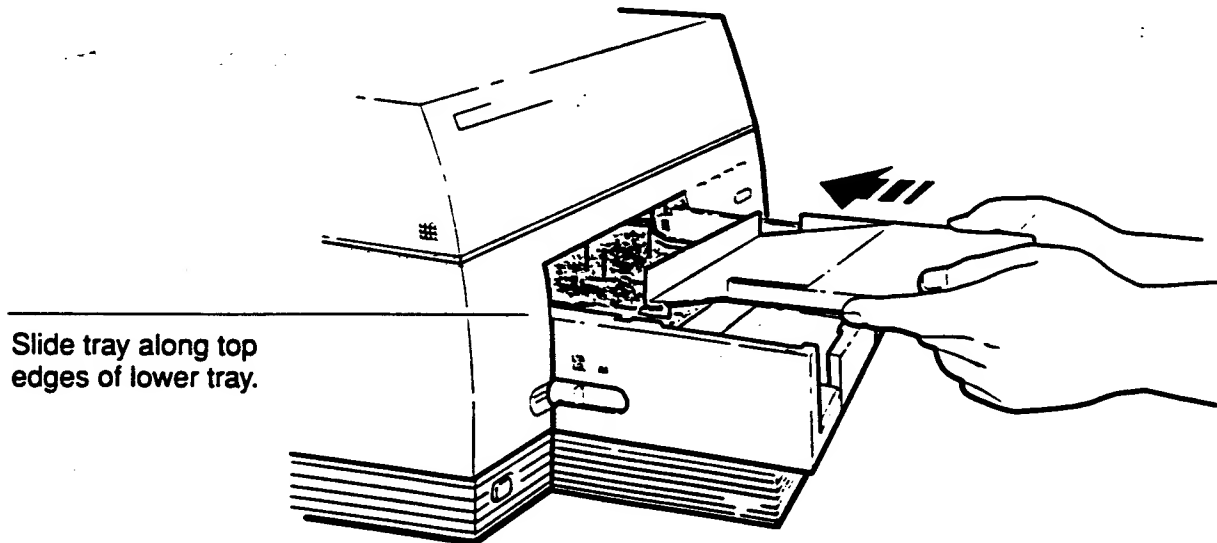


2. Slide the tray forward along the rail guides of the printer until the paper tray snaps firmly into place. (Be sure the input tray is also snapped onto the support tray.)

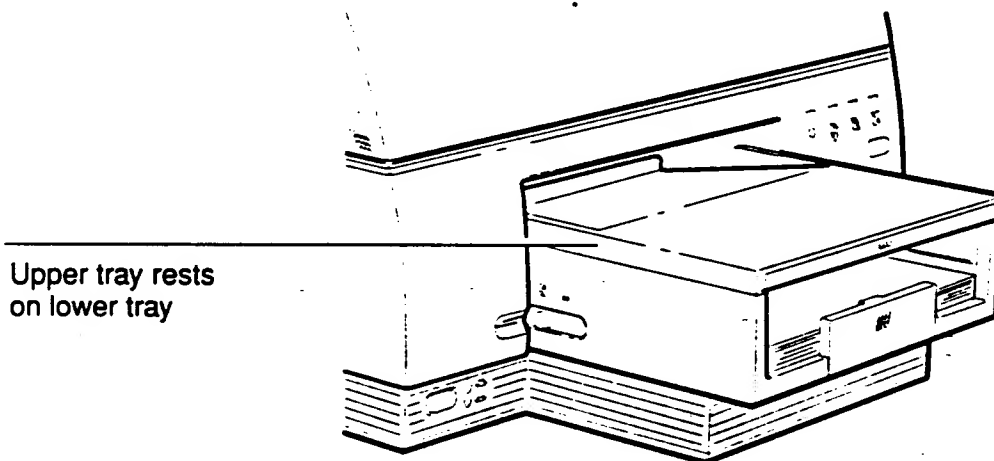


Install the output tray last

1. Insert the output paper tray as far forward as it will go.



2. Lower the tray until it settles firmly on top of the input paper tray.



Important

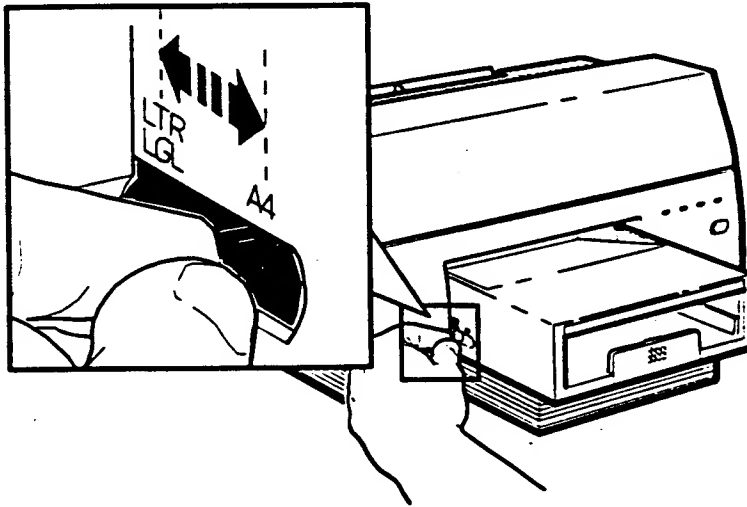
Check between the input tray and the tray support to make sure they are snapped together. If not, push down on the top of the tray assembly and they will snap together.

Load a stack of paper

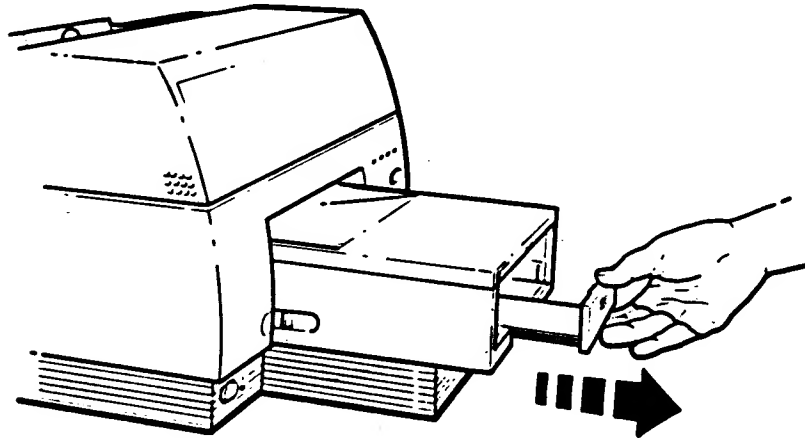
1. Move the paper-width selector on the left side of the lower paper tray all the way to one end or the other to load letter-, legal-, or A4-size paper.

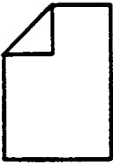
Important

The paper-width selector position is correct only when fully forward or fully back.



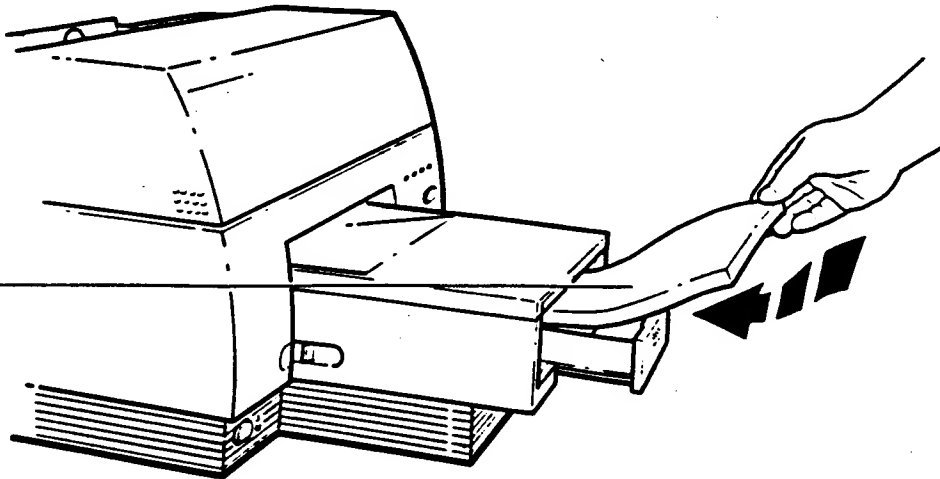
2. Pull the paper-length adjuster from the lower paper tray until it comes to a stop.



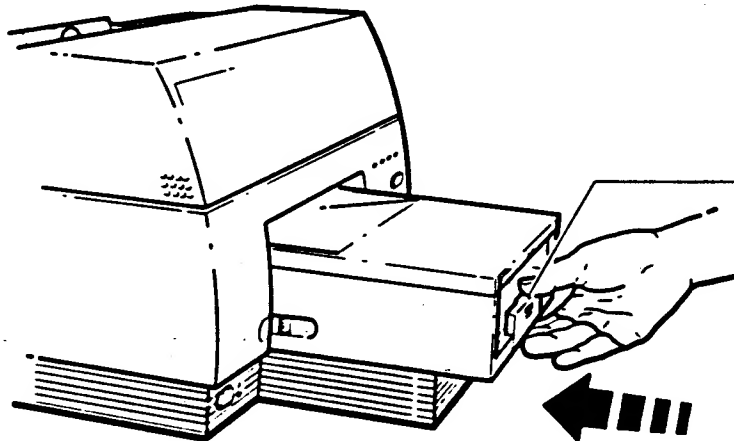


3. Insert a stack of paper (up to 180 sheets) fully forward into the input tray with the print side down and letterhead first. Make sure the paper is lying flat at all its corners and is not lying on top of any obstructions. Paper can be inserted with the upper tray on or off.

Insert paper fully forward with print side down and letterhead first.



4. Push the paper-length adjuster forward so that the paper is fully inserted into the printer and the adjuster comes to a stop. The adjuster may not go all the way forward, depending on the length of the paper.



Tray is full when paper is up to tab.

Install the optional 500-sheet paper tray

If you have purchased an optional 500-sheet paper tray (HP C3543A), install it next. Refer to the installation booklet that came with it.

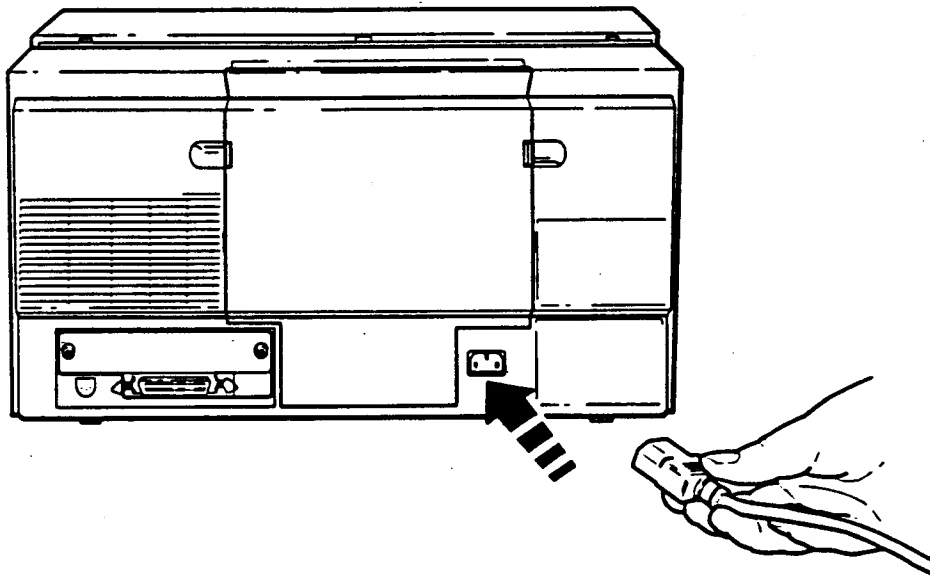
Connect the power cord

The printer comes with the power cord for the country to which it is shipped. If the plug on your power cord doesn't look familiar, contact your dealer or local HP Sales and Support Office.

WARNING

In case of emergencies, be sure that the plug in the outlet is readily accessible to all persons. Power is present in the printer even if the On/Off button is off. To completely shut off power, you must disconnect the power cord. Be sure to use the power cord with a properly grounded outlet to avoid electric shock.

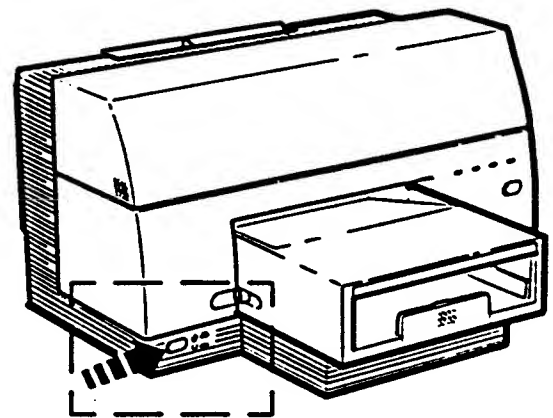
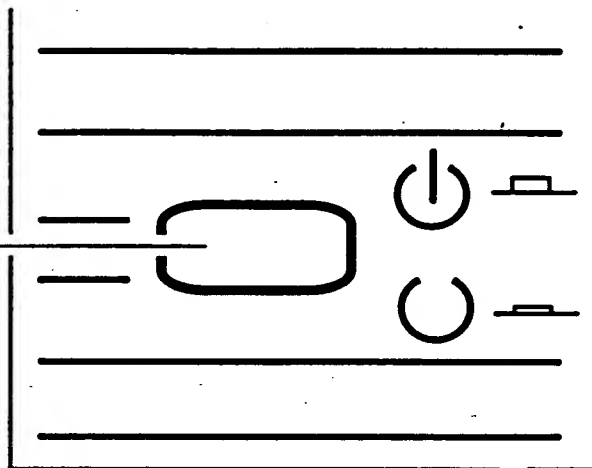
1. Insert the connector on the power cord into the power socket on the back of the printer and the other end into a properly grounded power outlet.



Turn the printer on

Important

The On/Off button, when in the Off (raised) position, puts the printer in a "standby" condition (also, any data in the printer's memory is erased). This means that although the printer is not functional, there is still power applied. When the On/Off button is set to the On (depressed) position, the printer is "ready" to print after completing an initialization sequence. The illustration below shows the button settings and associated symbols.



Off (standby)

On (ready)

Important

The top cover must be closed before and during the entire time the printer is initializing or printing. If you open the top cover while the printer is initializing, the printer will not initialize properly. A troubleshooting table provided in Chapter 5 will help you if the printer does not initialize properly.

Print a self test

Use the printer's built-in self test to verify that the printer is operating properly. (The printer does not have to be connected to a computer to run the self test.) The self test gives the status of the printer's page specifications, type of I/O you are using, how much memory you have installed in the printer, the printer's firmware version, and other important information. A sample of the self test is shown on the next page.

1. Make sure paper is loaded in the paper tray, print cartridges are loaded and pushed fully forward, and the top cover is closed.
2. Turn the printer on by pressing the On/Off button.
3. Make sure the Ready light is on. If any of the other lights are on, refer to Troubleshooting, Chapter 5.
4. Press the blue front-panel button to print the self test.

Ready light is on.



Press button
to start self test.



Performing the self test at this point in the printer setup is designed to ensure that the printer is working properly before you connect it to your computer. Some thin random streaks may appear in the color bars when the self test is printed. This may not affect the quality of your print job. After you connect the printer to your computer, print a file from a software application and use that print job to determine the print quality. If you find print-quality problems, refer to the Troubleshooting chapter in this User's Guide.



Four color bars and lines on the self test should appear solid as shown below. The intensity of the colors will vary depending on the type of paper (bond paper, premium paper, glossy paper) used. (Data below the bars are explained on the next page.)

Each bar is
a solid color



General

Energy Star: 60 minutes
Centronics Speed: Fast
I/O Timeout: 300
MEt Usage: 23%
Pages Printed: 2
Serial Number: 56IRON3193
Firmware Version: 3.1
PCL 5 Code Rev: V12.8f
Device Location:
Asset Number:
System Contact:

Page

Pitch: 12 cpi
Symbol Set: Roman8
Orientation: Portrait
Copies: 1
Lines/Page: 60
Page Protection: Off
Print Quality: EconoFast
Color Mode: Color

Trays

Optional Lower Tray: Installed
Default Tray: Lower Tray
Auto Select: On
Tray Lockout: Paper Tray
Default Paper Size: A4
Default Paper Type: Plain Paper

Language

PCL 5: Installed
PostScript: Installed
Active Language: PostScript
Default Language: PCL 5
Automatic Language: On
Context Switching: On

Hardware

SIMM Slot 1: Empty
SIMM Slot 2: Empty
SIMM Slot 3: PostScript
Total RAM Size: 6 Megabytes

Errors

Interface Card

I/O Card Not Installed



Self-test data

General	
Energy Star	On (default) to save energy during idle time (requires slightly more time to warm up for first page to print), or number of minutes.
Centronics Speed	Fast (default) for newer computers. Standard for older model computers.
I/O Timeout	5–1800 seconds (300 is default). This is the time the printer waits for new data from the interface being used. If no data is received after this time, the printer will reset to the default interface.
MEt Usage	Shows percentage of total pages that required Memory Enhancement in order to print the entire page. For example, if it shows 40%, then 40% of the total number of pages printed needed to use MEt. This is an indication that the types of print jobs you are doing require additional memory to be installed in the printer. The higher the percentage, the more likely you should add memory to your printer to improve performance.
Pages Printed	Total number of pages printed by the printer.
Serial Number	Permanent record of the serial number located on the back of your printer.
Firmware Version	Records the latest version of firmware installed in the printer.
PCL 5 Code Rev	Records the latest version of the PCL 5 language code.
Trays	
Optional Lower Tray	Installed or Not Installed. Becomes the default tray when installed.
Default Tray	Records which tray (the printer's paper tray or the optional 500-sheet paper tray) the printer will automatically print from.
Auto Select	On or Off. Allows printer to use default paper tray.
Tray Lockout	Records which tray (the printer's paper tray or the optional 500-sheet paper tray) will be locked out when the auto-selected tray runs out of paper.
Default Paper Size	Letter, A4, or Legal.
Default Paper Type	Plain, Premium, Glossy, or Transparency
Hardware	
SIMM Slot 1	Will show whether a PostScript, memory SIMM (and size), or font SIMM is installed in this slot. The PostScript SIMM can only be installed in this slot.
SIMM Slot 2	Will show what size memory SIMM or font SIMM is installed in this slot.
SIMM Slot 3	Will show what size memory SIMM or font SIMM is installed in this slot.
Total RAM Size	Total of the printer's resident memory and any additional memory SIMMs. 4 to 52 megabytes for the HP 1600C. 6 to 38 megabytes for the HP 1600CM.
Interface Card	Will show what type of interface card is installed in your printer.

Self-test data (continued)

Page	
Pitch	10 cpi (default) or 8, 12, 16.67, 18, and 20.
Symbol Set	Roman-8 (default). Refer to your HP DeskJet 1600C Reference Guide for a list of symbol sets available.
Orientation	Portrait (default) or Landscape.
Copies	1 (default) – 999.
Lines/Page	5 – 128 (default is 60).
Page Protection	On — Can be used when you have 8 megabytes or more of memory installed in the printer. Will ensure that almost all pages with complex graphics will be completely printed. Off — Default setting for normal print jobs.
Print Quality	EconoFast — The default setting for fast printing. Great for spreadsheets. Normal — For quality printing on all your print jobs. Presentation — For printing on transparency film and glossy paper.
Color Mode	Color or Print in Grayscale.
Language	
PCL 5	Installed.
PostScript	Installed or Not Installed.
Active Language	None, PCL 5, or PostScript (if installed). Shows which is currently active.
Default Language	PCL 5 or PostScript (shows which language the printer will default to if the printer is reset).
Automatic Language	On or Off. (For service use only.)
Context Switching	On (default) or Off. Set to Off when using older PostScript printer software that does not activate automatic language switching.
Errors	Will list printer errors.



Connect the interface cable

For PC users connecting to Centronics

CAUTION

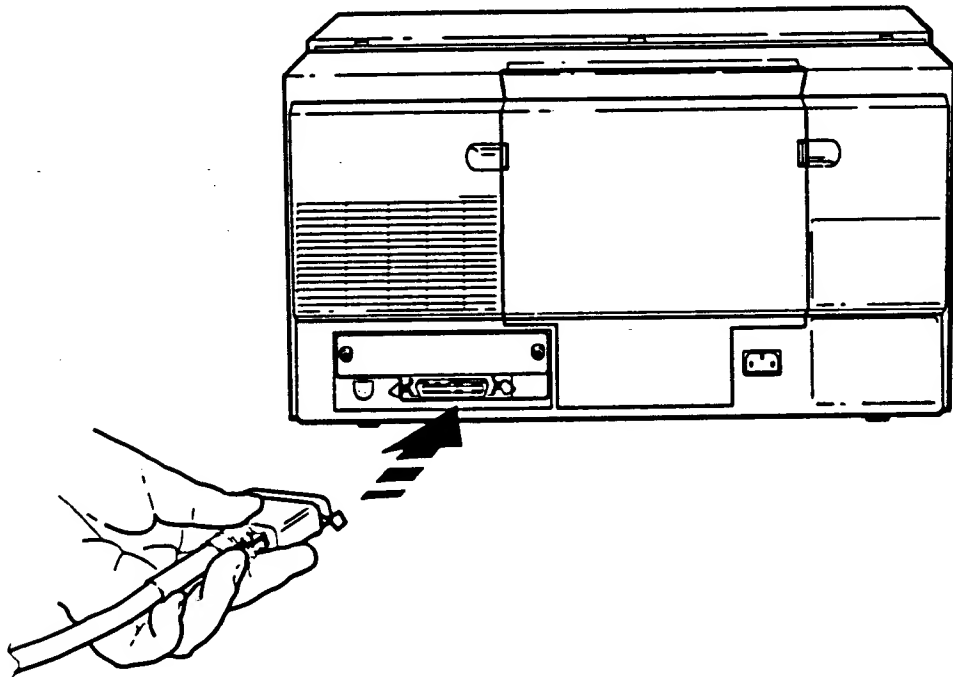
Many computer systems will have both Centronics and RS-232-C ports. These ports frequently appear identical. Make sure you plug your cable into the Centronics port (it should be labeled), or damage could occur to your printer.

Important

In order to fully utilize the HP DeskJet 1600C Control Panel and Status Monitor, you must use a bidirectional Centronics cable (all pins connected). In addition, you may need to turn bidirectional support ON in your computer's Setup program. Refer to your computer documentation for details.

1. Turn the printer and computer off and remove the power cord from the printer.
2. *On the computer*, connect the end of the Centronics cable that has screws to the computer's Centronics port and tighten the screws.
3. Connect the other end of the cable to the printer's Centronics port.
4. Latch the clips into place.
5. Plug the printer in and turn the printer and computer on.

In some cases, you may need to install a Centronics interface card in the computer.



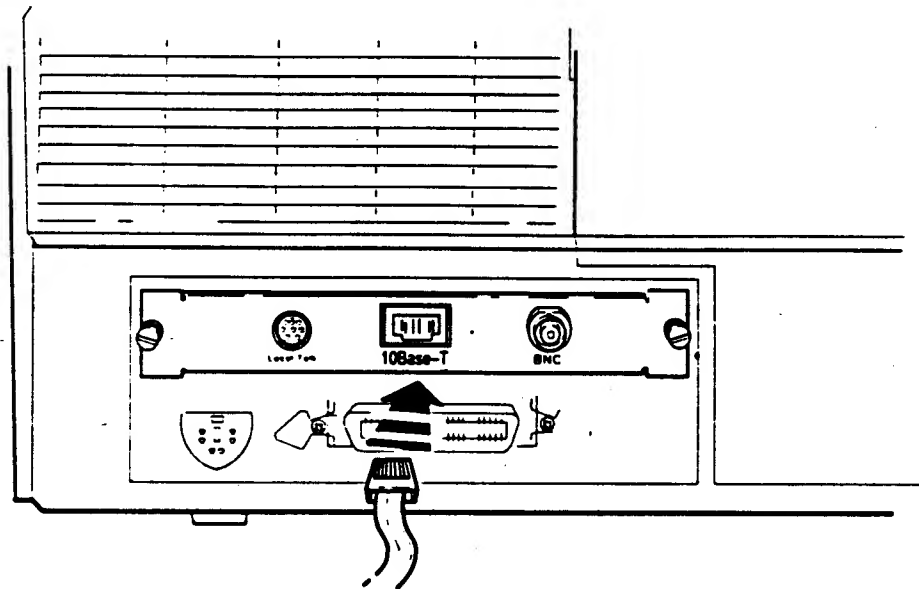
For PC users connecting to Ethernet 802.3

The following procedure assumes that an appropriate HP JetDirect Print Server has been installed into the HP DeskJet 1600C. Token Ring and 3rd-party interface cards can also be used. If you have not yet installed your print server, refer to the documentation that comes with your HP JetDirect Print Server. The HP DeskJet 1600CM comes with an HP JetDirect Print Server (already installed), configuration guide, and configuration disks for Novell Netware.

HP JetDirect Print Servers are listed and described in the Ordering Information section of this User's Guide.

Connecting with 10Base-T

1. Turn the printer and computer off and remove the power cord from the printer.
2. Plug an RJ45 cable firmly into the interface port on the print server as shown below.
3. Plug the computer end of the interface cable into the hub designated for your printer.
4. Plug the printer in and turn the printer and computer on.

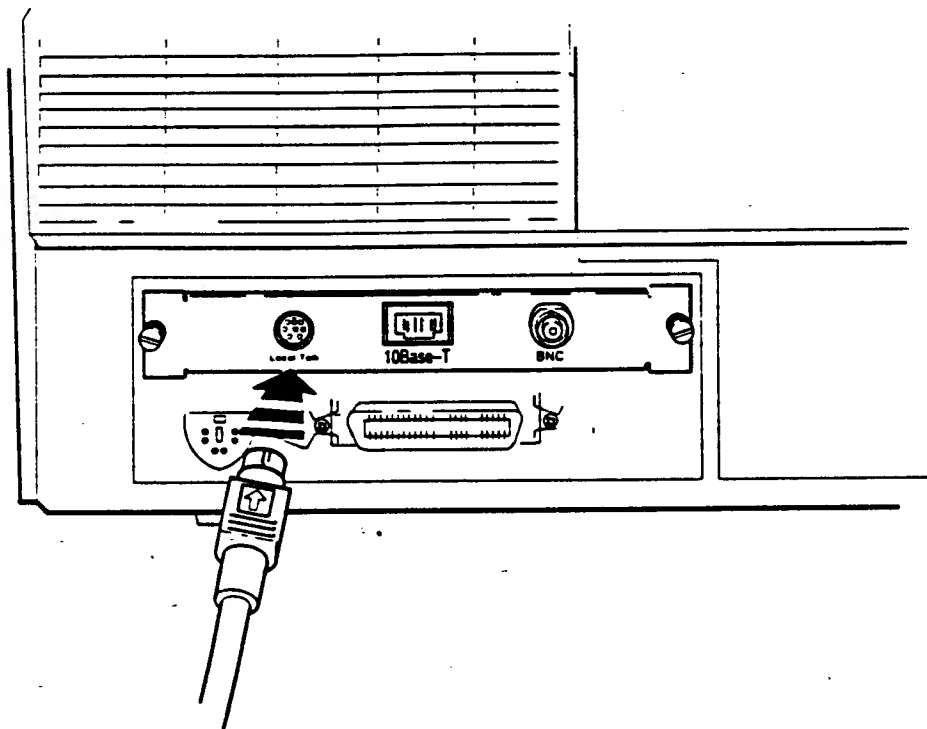


For PostScript Macintosh users with LocalTalk interface

The following procedure assumes that you have an HP DeskJet 1600CM printer or that the PostScript upgrade has been installed in the printer. Refer to Chapter 6 for PostScript upgrade installation procedures.

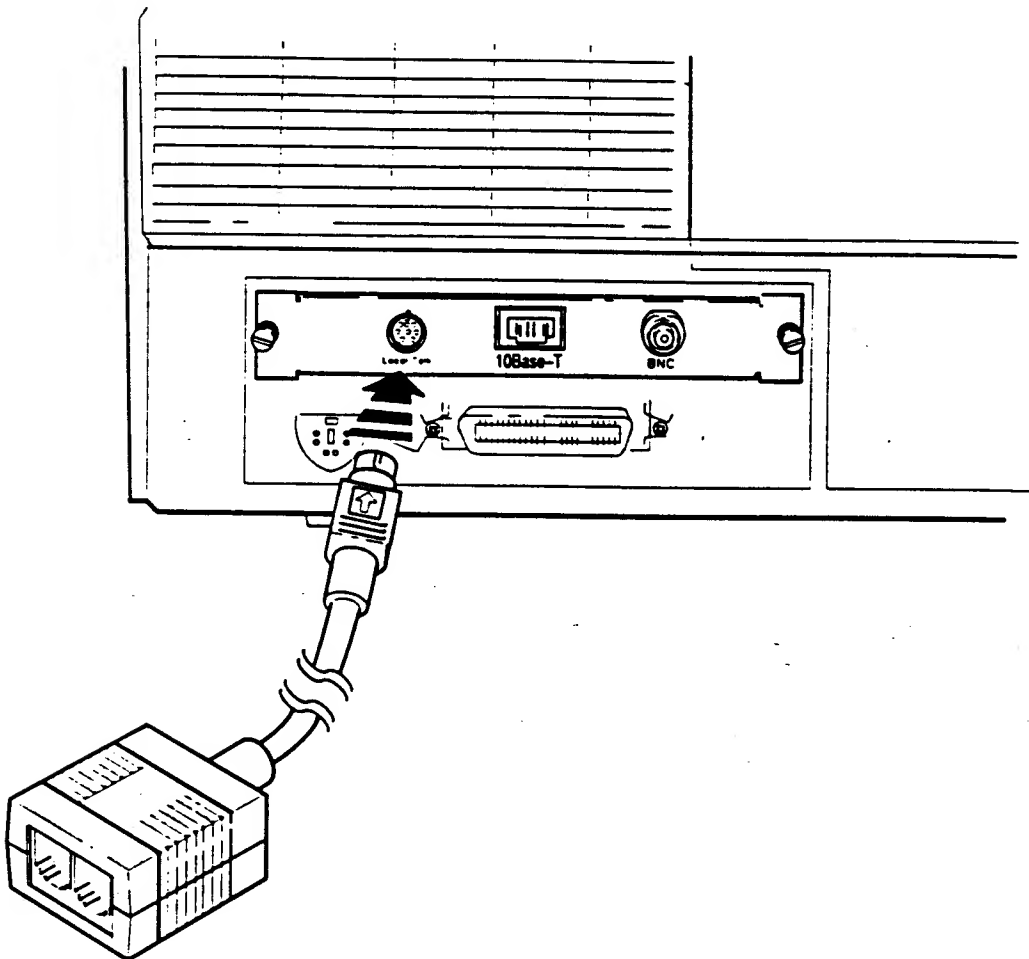
Connecting directly to your Macintosh

1. Turn the printer and computer off and remove the power cord from the printer.
2. Plug one end of a DIN-8 cable into the LocalTalk card on the back of the printer. See the illustration below.
3. Plug the other end of the cable into the printer port on your Macintosh.
4. Plug the printer in and turn the printer and computer on.



Connecting to a LocalTalk network

1. Turn the printer and computer off and remove the power cord from the printer.
2. Plug a LocalTalk connector box firmly into the interface port on the HP JetDirect Print Server as shown below.
3. Plug a second LocalTalk connector box into the printer port on the back of the Macintosh.
4. Plug one end of the interface cable into the LocalTalk connector box on the printer, and the other end into the LocalTalk connector box on the computer. If you are using a PhoneNet type LocalTalk connector, ensure that both ends of the network are terminated.
5. Plug the printer in and turn the printer and computer on.

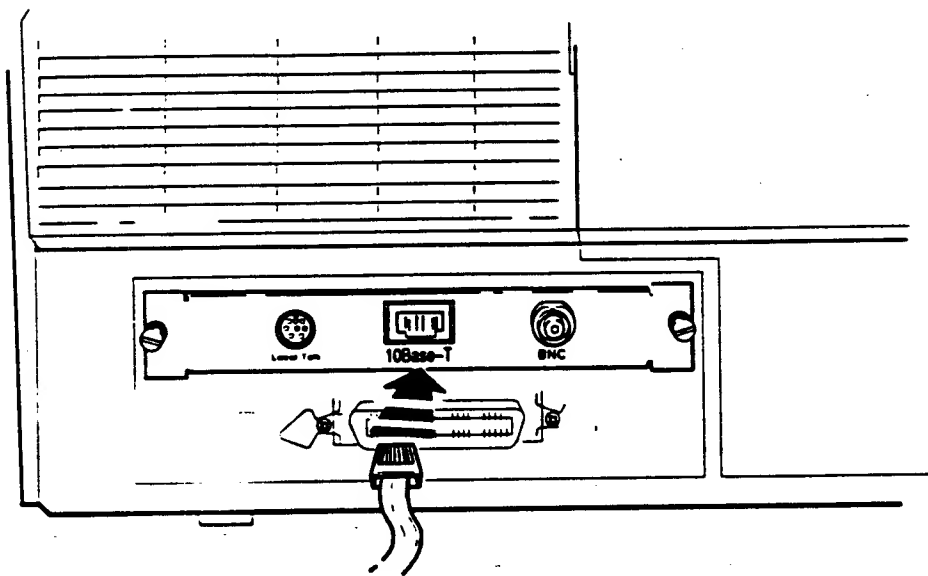


For PostScript Macintosh users with EtherTalk interface

The following procedure assumes that you have an HP DeskJet 1600CM printer or that the PostScript upgrade has been installed in the printer. Refer to Chapter 6 for PostScript upgrade installation procedures. The first set of instructions covers connecting with 10Base-T, the second set covers connecting with BNC.

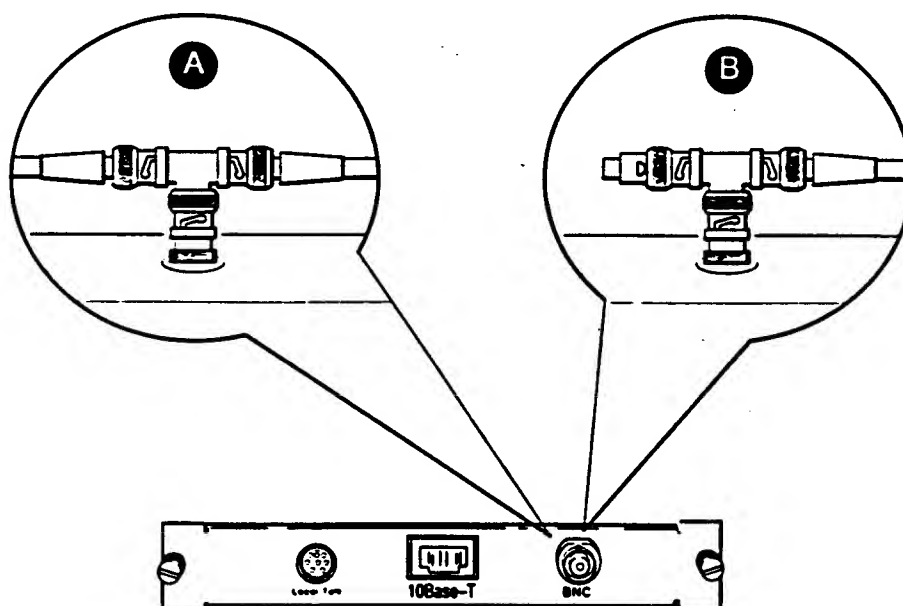
Connecting with 10Base-T

1. Turn the printer and computer off and remove the power cord from the printer.
2. Plug an RJ45 cable firmly into the interface port on the print server.
3. Plug the computer end of the interface cable into the hub designated for your printer.
4. Plug the printer in and turn the printer and computer on.



Connecting with BNC

1. Turn the printer and computer off and remove the power cord from the printer.
2. Attach one end of your ThinLAN (Thin Ethernet) cable to one side of a BNC "T" connector.
3. Attach another ThinLAN cable section or a 50-ohm terminator to the other side of the BNC "T" connector. If you are attaching the HP DeskJet 1600CM printer in the middle of your network, you must use another ThinLAN cable section as shown in **A** below. If you are attaching the printer to the end of your network, you must use a 50-Ohm terminator as shown in **B** below.



4. Attach the BNC "T" connector to the JetDirect card's BNC port. If the cables and "T" connector described in steps 2 and 3 are already installed on your network cable, attaching the BNC "T" connector to the adapter card's BNC port will not disrupt your network's operation.
5. Place an insulating cover over the connection. The insulating cover protects the adapter card from electrostatic damage.
6. Plug the printer in and turn the printer and computer on.

What's next?

Installing your printer software

After you have completed setting up your printer, the next step is to install your printer software. The *Installation and help guide* for your printer software is packaged with your software disks.

Important

If you are a PC user with a PostScript version of the DeskJet 1600C — to get the full use of all your printer's features, you need to install the HP DeskJet 1600C Printing System for Windows in addition to the HP DeskJet 1600CM PostScript Windows Driver. Doing this will add the Windows Status Monitor and the HP DeskJet 1600C Control Panel software utilities. By also installing the HP DeskJet 1600C Reference Guide, you will have additional valuable information for your printing needs. All of these features come in the box.

Using the rest of this guide

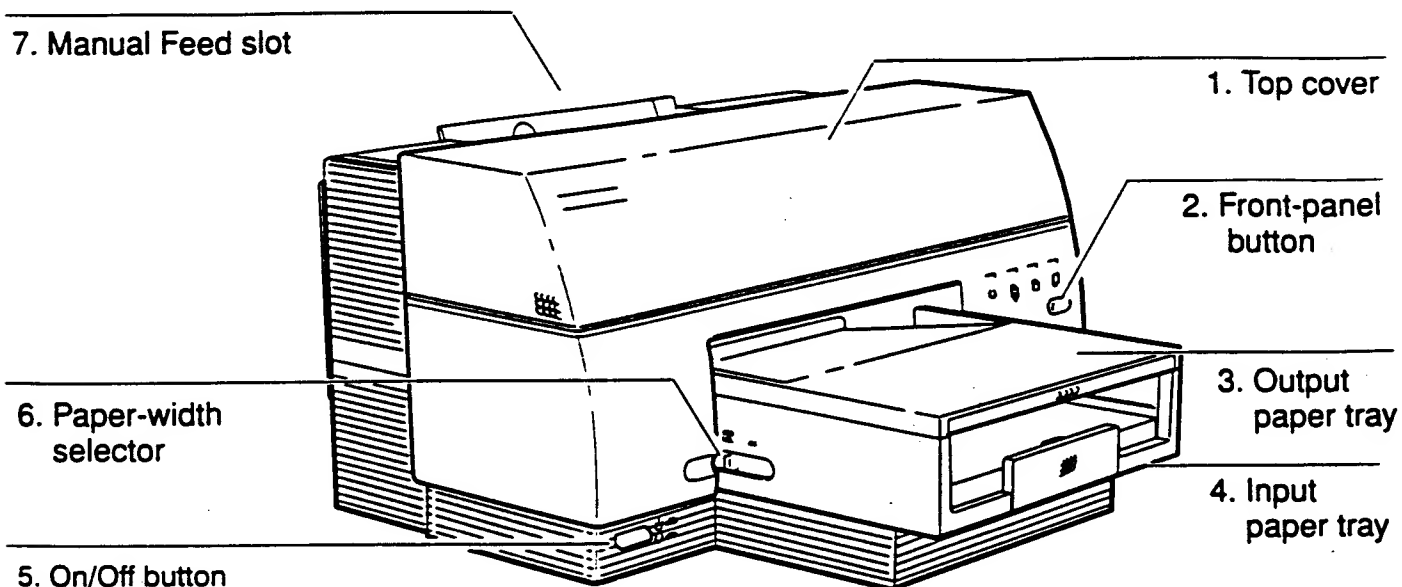
Refer to the following chapters in this guide for more detailed information concerning the use of your printer including:

- Chapter 2 — Printer features
- Chapter 3 — Using your printer (controls, switches, and indicators)
- Chapter 4 — Using printer software
- Chapter 5 — Troubleshooting printer problems
- Chapter 6 — Adding options to expand your printer's capabilities
- Technical information — Includes product regulations and specifications
- Ordering information — For ordering printer accessories

Your printer's features

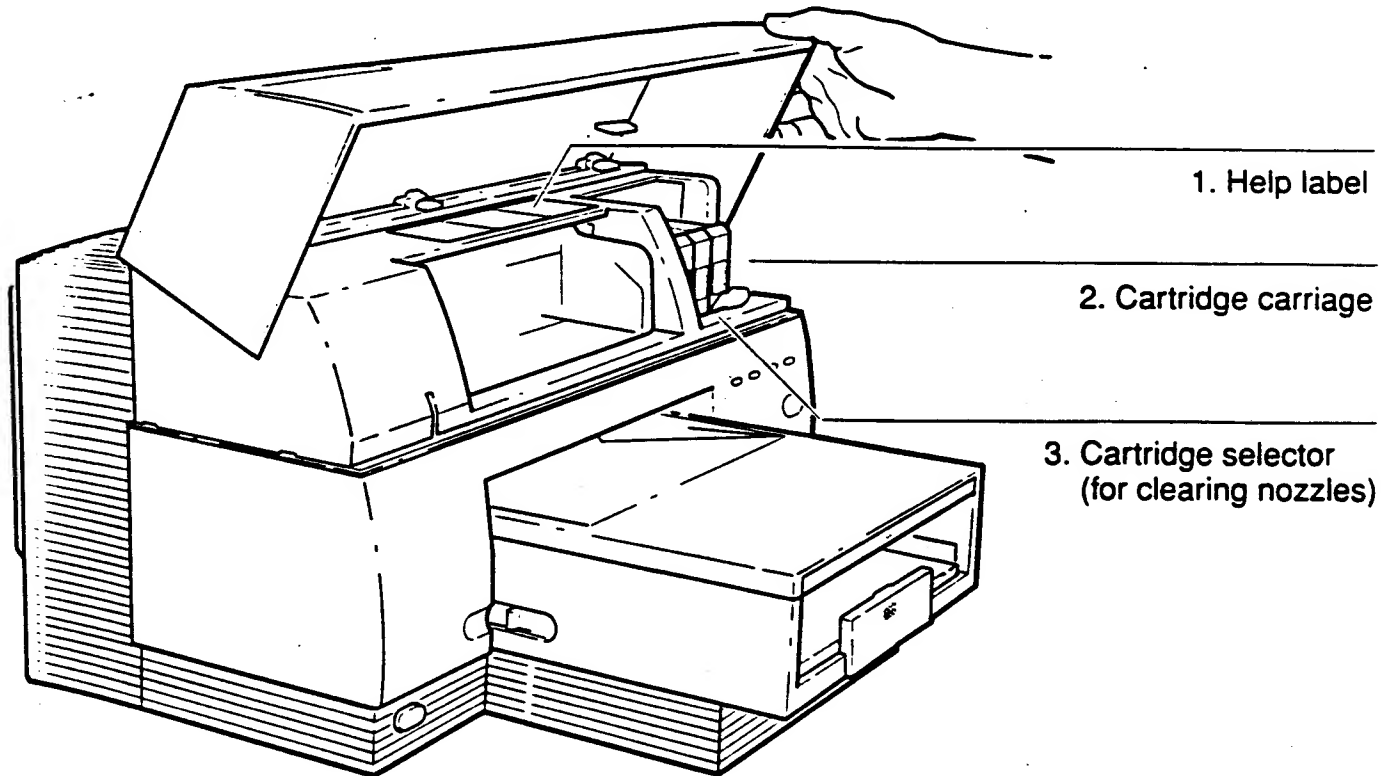
Identify your printer's features

Front area



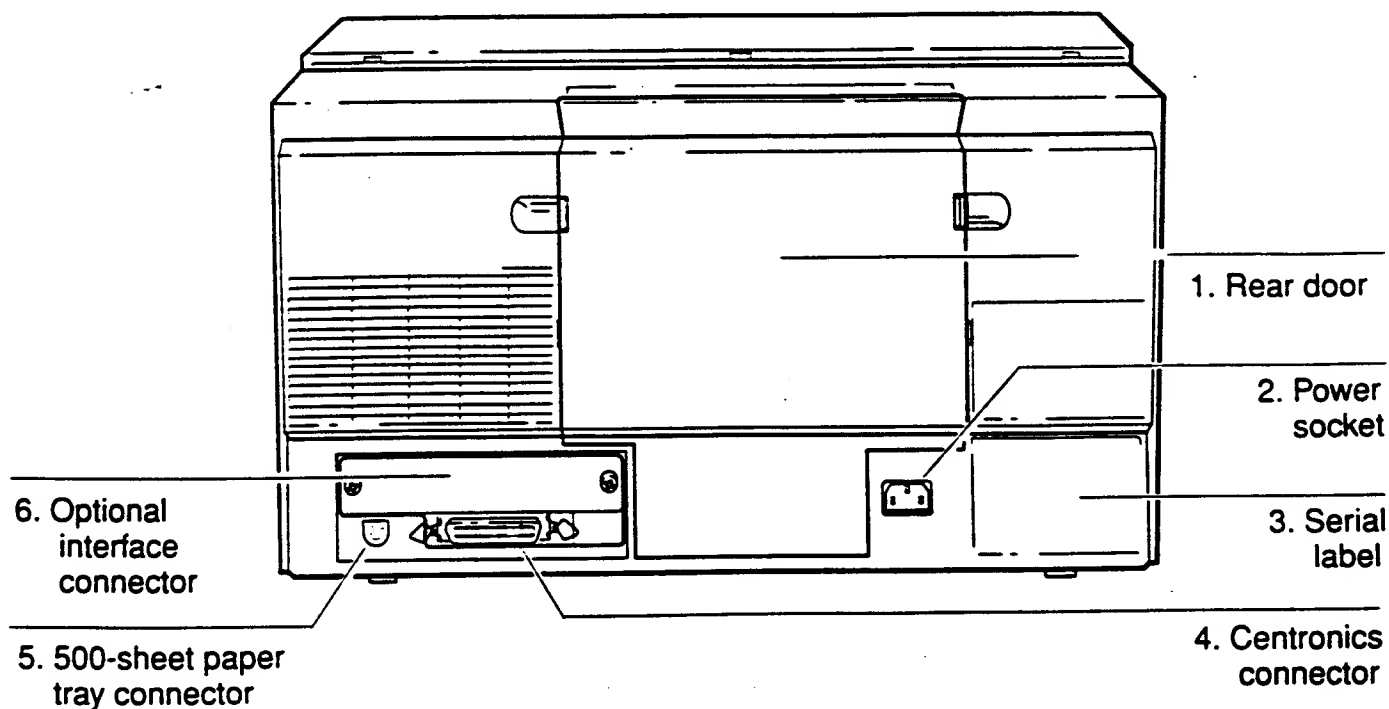
1. **Top cover** — Protects print cartridges and cartridge carriage (needs to be closed when printing and during power up).
2. **Front-panel button** — A multi-function button used for printer operations that are not controlled by software. (Refer to chapter 3 for detailed information.)
3. **Output paper tray** — Holds completed printed pages.
4. **Input paper tray** — Holds a stack of paper or transparencies for automatic loading.
5. **On/Off button** — Sets the printer to Off (standby) or On (ready).
6. **Paper-width selector** — Adjusts the printer to the width of the paper being used (Letter/Legal or A4). The paper-width selector position is correct only when fully forward or fully back.
7. **Manual Feed slot** — Allows label stock and envelopes to be manually fed into the printer.

Print cartridge area



1. **Help label** — Contains instructional diagrams for loading print cartridges.
2. **Cartridge carriage** — Holds four replaceable print cartridges.
3. **Cartridge selector** — Selects print cartridge for clearing clogged nozzles.

Rear printer area



1. **Rear door** — Allows access to rear paper path to clear paper jams and add additional memory.
2. **Power socket** — Accepts plug from power cord.
3. **Serial label** — Shows the model and serial number of your printer. Record this information on the inside-front cover of this User's Guide.
4. **Centronics connector** — Accepts the bidirectional Centronics interface cable connecting the printer to a computer or network.
5. **500-sheet paper tray connector** — Accepts the interface cable connecting the optional 500-sheet paper tray to the printer.
6. **Optional interface connector** — Allows the printer to accept an optional HP JetDirect Print Server card. This card is standard on the HP DeskJet 1600CM.

Printer features

The HP DeskJet 1600C printer produces high quality, black (600 by 600 dpi) and color (300 by 300 dpi) printing on a variety of paper types. The printer also complies with the U.S. Government's "Energy Star" program that reduces the amount of power consumption during idle time.

Other features include:

- ColorSmart technology that makes color printing simple and easy.
- Memory Enhancement technology (MEt) that ensures the printer will entirely print most complex print jobs.
- Networking capability for easily shared, cost-effective color. The HP DeskJet 1600CM comes standard with Ethernet, LocalTalk, and Centronics interfaces. Optional HP JetDirect Print Servers are available for the HP DeskJet 1600C. JetAdmin and JetPrint network management tools are standard with JetDirect Print Servers.
- Multi-platform printing — Automatic I/O switching between Centronics and the network interface.
- LaserJet 4 Plus compatibility, including typefaces, margins, memory, and optional HP JetDirect Print Server interface cards.

Printer features continue on the next page.

Your printer's features

Printer features

- **Printer languages** — including HP PCL 5C (with HP-GL/2 extensions), HP PML, HP PJP, and optional Adobe[®] PostScript[™] Level 2 Languages.
- **Adobe PostScript Level 2** is standard on the HP DeskJet 1600CM and is available as an accessory upgrade for the HP DeskJet 1600C. Both the PostScript upgrade and the fully configured PostScript product come with environment drivers for Windows, Macintosh, and Macintosh QuickDraw GX.
- **Automatic language switching** between PCL 5C and Adobe PostScript.
- **Environment drivers for Microsoft Windows** provide printer control and status feedback at your computer, TrueType and ATM support, color matching to the screen, and PANTONE[®] color matching (when printing a PANTONE color using an application that is Pantone certified).
- **The DeskJet 1600C Control Panel** — a DOS printer-software utility that allows DOS users to control the printer from the computer.
- **The DeskJet 1600C Status Monitor for Windows** — a printer software utility that lets you know the status of your printer without leaving your computer screen. (Available for printers that are directly connected to a computer.)
- **Out-of-ink sensing and automatic suspension of printing** to prevent wasted paper.

ColorSmart technology

ColorSmart makes color printing simple and easy. It eliminates guesswork and cumbersome printer setup choices while automatically providing the output you are looking for.

ColorSmart technology is used to produce clear, vivid, and natural color output on your print job when using Windows 3.1, PostScript for Windows, and Macintosh QuickDraw GX PostScript printer software, and is the default setting.

ColorSmart intelligently analyzes documents to be printed, identifies the objects on each page, then automatically and fully optimizes the vibrancy, clarity and color-matching capabilities of the HP DeskJet 1600C and 1600CM to produce high-quality documents. It also allows you to select manual color options and maintain your preferred level of personal control over your print settings.

ColorSmart is the easiest solution for the best color output. It enables the HP DeskJet 1600C and 1600CM to perform optimally, whether you are printing pages with text, business graphics, photographs (scanned images), or a combination of all three.

ColorSmart provides better halftoning and color-matching techniques, as well as compatibility with both system-level and applications software-based color management products.

Memory Enhancement technology (MEt)

Memory Enhancement technology effectively doubles standard printer memory in enhanced HP PCL 5 and allows most documents to print using the printer's standard amount of memory. MEt automatically compresses data to print complex pages. Very complex pages may slow print speed down, an indication that you need more memory for better print speed.

Network capabilities

The HP DeskJet 1600C and 1600CM printers support the following network operating systems using HP JetDirect Print Servers:

- Novell NetWare (Ethernet or Token Ring)
- Microsoft LAN Manager
- Windows for Workgroups
- Windows NT
- TCP-IP (HP-UX, SunOS, and SCO UNIX)
- AppleTalk

Protocols supported include IPX/SPX, TCP-IP, DLC/LLC, LocalTalk, and EtherTalk.

Using a shared printer

The HP DeskJet 1600C and 1600CM printers can be shared using a switch box or a LAN along with the appropriate HP JetDirect Print Server. When you use your printer in a shared environment, be aware of these considerations:

- Coordinate the use of default fonts and downloaded disk-based typefaces with other users. This will save printer memory and help avoid unexpected printer output.
- If you switch between PCL 5 and PostScript operation, your printer will erase all downloaded disk-based typefaces and macros.
- The DeskJet 1600C Control Panel and Windows Status Monitor are not available on a network, although most features can be added to the network using PJI commands. Have your network administrator refer to the HP DeskJet Reference Guide.

Your network operating system may automatically protect each user's print jobs from the effects of other users in the system. Check with your network administrator.

Multi-platform printing

Multi-platform printing is available with the addition of an HP JetDirect Print Server. The DeskJet 1600C printer uses I/O auto-sensing which allows you to connect computers with different interfaces to your printer simultaneously. The printer recognizes which interface the data is coming from and processes it properly.

Auto-sensing will recognize when you have an HP JetDirect Print Server interface card installed in the printer and will automatically switch to the appropriate I/O port if a file is received on that interface.

If a person printing on one interface cancels a print job (or it is otherwise "abnormally terminated" such as by a power failure), the printer will wait 300 seconds before accepting data from another interface. This setting can be changed using the 1600C Control Panel or using PJJL commands.

Typefaces

The standard HP DeskJet 1600C contains 35 Intellifont and 10 TrueType typefaces. If you have PostScript installed in the printer, you can also access 35 Adobe Type 1 typefaces. All of these internal typefaces are scalable. It is not possible to access Intellifont or TrueType typefaces from PostScript, nor can you access Adobe typefaces from PCL.

Printer memory

The HP DeskJet 1600C is designed as a mainstream office printer. The base unit comes with 4 megabytes of memory (6 megabytes in the PostScript version) and will print complex word processor files and business graphics such as bar charts, pie charts and presentation overheads. Additional memory is required to do graphic arts, technical graphics and large scanned images. You can install additional memory in the printer (full capacity is 100 megabytes in the HP DeskJet 1600C and 72 megabytes in the HP DeskJet 1600CM). Printer memory can be expanded in blocks of 1, 2, 4, 8, 16, or 32 megabytes (refer to the "Ordering Information" chapter in this manual). The following table gives general guidelines for adding memory.

Type of Job	Additional Memory Required
Complex CAD drawings	Add 2 Mbytes
Full-page raster image (landscape)	Add 2 Mbytes
Very complex fills	Add 4 Mbytes
Many downloaded fonts	Add 4 Mbytes
Many downloaded macros	Add 4 Mbytes

If your file is too large or complex to print, the printer will print only the amount of the file within the resident memory. The printer will also print "Not Enough Printer Memory — See User's Guide" at the bottom of the page if you are using PCL as a default language. If you are using PostScript as the default language, the printer will print "Error: LimitCheck".

If you set Page Protection in your Windows printer software, and have a minimum of 8 megabytes of memory installed in your printer, your print job will get printed although time-to-print may be slower.

Refer to "Installing printer options" in chapter 6 of this manual if you wish to add more memory to your printer.

Printer languages

HP PJP

The HP DeskJet 1600C and 1600CM use Printer Job Language (PJP) to switch to the appropriate language (PCL 5C, PostScript, or HP-GL/2) prior to starting a print job. PJP also provides printer status and control access for network and direct I/O connections.

HP PML

The HP DeskJet 1600C and 1600CM use Peripheral Management Language (PML) to provide status feedback and remote printer commands for your DOS applications.

HP PCL 5C

The HP DeskJet 1600C and 1600CM use Printer Control Language (PCL 5C) to set up your printed image and convey all associated data for output.

Adobe PostScript Level 2

The HP DeskJet 1600CM (part number C3541A) can print PostScript Level 2 files. The HP DeskJet 1600C (C3540A) can be upgraded to print PostScript files by installing the PostScript Upgrade kit (C3542A). For Macintosh users who are upgrading, an HP JetDirect Print Server interface card (J2550A or J2552A) must also be ordered and installed. Refer to the "Ordering information" section of this User's Guide.

HP-GL/2

HP-GL/2 is supported as a subset of PCL 5C. Your printer can print plotter files that use HP-GL/2 graphics language. Your Windows printer driver that came in the box with your HP DeskJet 1600C and 1600CM will support HP-GL/2.

HP DeskJet 1600C Control Panel

The HP DeskJet 1600C Printing System for Windows disk contains a printer software utility called the DeskJet 1600C Control Panel that enables you to select printer settings that may not be supported by your application. With this new utility, you no longer have to make print quality, paper, and other control settings at the printer. The DeskJet 1600C Control Panel is used in the DOS environment and through the DOS prompt in Windows. Remember that your application settings override any corresponding settings in the Control Panel.

The DeskJet 1600C Control Panel is not available on a network. However, most features can be set by your network administrator using PJI commands. The commands are listed in the HP DeskJet Reference Guide.

Status Monitor

The Status Monitor, a program within the HP DeskJet 1600C Printing System for Windows, reports printer messages and error conditions (such as out of paper and out of ink) directly to your computer screen. It is especially useful if you can't see the printer while you work. When a printer condition arises, the Status Monitor displays a message on your screen without affecting your work in progress.

The Status Monitor is not available on a network.

Out-of-ink sensing

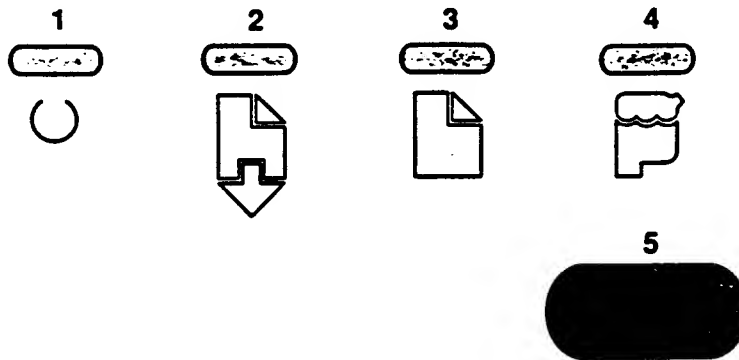
The HP DeskJet 1600C and 1600CM sense when one or more ink cartridges are out of ink. When a cartridge is out of ink, the Check Print Cartridges light will come on and a message will be sent to your computer. The printer will then complete the current page and stop. When you have replaced the affected print cartridge, press the blue front-panel button once to continue your print job. This feature will prevent paper waste when printing a large job with many pages, multiple jobs, or many copies of one job.

Using your printer



Using the front panel

Each function and light is numbered below and explained in the following pages.



1: Ready light

The Ready light will be on when the printer is turned on and initialized. The Ready light will flash when data is being processed, indicating that the printer is busy. The Ready light will be off when the printer is turned off, the top cover is raised, when error conditions are present, or one or more print cartridges are missing.



2: Form Feed/Manual Feed light

When the Form Feed/Manual Feed light is on, it indicates that there is data in the printer memory that is ready to be printed (form feed). If the Form Feed/Manual Feed light is flashing, it indicates that paper needs to be manually fed into the manual feed slot at the top of the printer (manual feed).

Use manual feed (through your software) when printing multiple and/or consecutive pages that you want to load by hand—for example, if you are printing on label stock or envelopes. Be sure to wait for the Form Feed/Manual Feed light to come on before inserting the page.

Press the blue front-panel button to clear the printer from the manual feed mode or select Paper Tray from your printer software to begin feeding from the printer's default paper tray.

3: Check Paper light

The Check Paper light will come on and remain lit when the following occurs:

- The printer is out of paper.
- Paper is misfed into the printer (excessive paper skew).

The Check Paper light will flash when the following occurs:

- The printer has a paper jam.
- HP transparency film has been loaded with the white strip at the wrong end (sticking out of the printer). The printer thinks it has no paper since it can not sense the white strip.

After removing a paper jam, close the top cover and press the blue front-panel button to continue printing.



4: Check Print Cartridges light

The Check Print Cartridges light will come on steady when one or more print cartridges is missing or out of ink.

The light will flash when one or more print cartridges are not seated properly (not snapped forward in place or tape not removed) or have an electrical connection problem. The print cartridges are checked when the printer is turned on and when the top cover is raised and then lowered.

5: Front-panel button

The front-panel button is a multi-function button used for printer operations that are not controlled by software. Press the button once for the following functions:

- When the Ready light is on, to perform the self test.
- When the Form Feed/Manual Feed light is on, to print data still in the printer's memory.
- When the Form Feed/Manual Feed light is flashing, to override manual feed and begin automatic feed from the paper tray.
- When the Check Paper light is on, to resume a print job after correcting a problem.



What you need to know about paper

An exciting feature of the HP DeskJet 1600C and 1600CM is their printing versatility — the ability to print on a wide variety of paper types depending on your needs.

The HP DeskJet 1600C and 1600CM have been designed to print on plain paper such as photocopier or letterhead. HP Premium Paper can be used to maximize ink brilliance. HP Premium Transparency Film and HP Premium Glossy Paper provide the highest print quality for finished presentations. Refer to the “Ordering information” chapter of this manual for paper sizes and part numbers.

Important

If you are printing files with calibrated color, you should select the correct paper type so that your printer software will use the correct color maps for your print job.

The HP DeskJet 1600C and 1600CM will print on LaserJet and DeskJet label stock and on C5, DL, and #10 envelopes using the manual-feed slot at the top of the printer.

CAUTION

Do not use paper that has been pre-printed by devices (such as laser printers and copiers) that use toner. This includes some pre-printed forms and letterheads. *Toner will damage your printer.*

Loading paper

Important

Although plain paper, premium paper, glossy paper, and transparencies can be manually loaded into the manual-feed slot for printing, a manually-fed page's print quality will be slightly less than that of an automatically-fed page. Hewlett-Packard recommends you use the manual sheet feed slot only for label stock and envelopes.

Additional sheets of paper or transparency film can be added to the top of the paper stack in the paper tray for better quality output.

You can load Letter-size, A4-size, and legal-size paper for automatic sheet feed in the paper tray for unattended printing.

- Load all paper types the same way.
- Do not mix sizes of paper in the paper tray. This could cause a paper jam.
- Always load paper print side down and letterhead first in the paper tray. Printing on the correct side will make a *significant* difference in print quality with most paper types.

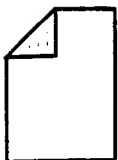
As you select paper for your HP DeskJet 1600C or 1600CM printer, be sure to choose only paper in the 16 to 24 lb (60 to 90 g/m²) range if you are using the printer's input paper tray. Colored photocopy, bond, and letterhead paper, or preprinted forms that fall within this range may be used in the printer. If you are using the optional 500-sheet paper tray, you can use paper in the 16 to 36 lb (60 to 135 g/m²) range. Be sure that all paper is free of tears, dust, wrinkles, and curled or bent edges.

HP Premium Paper has an arrow in the upper right-hand corner of the non-print side of the paper. Place the paper arrow-side-up in the paper tray.

Handle all paper types by the edges only. (Oil from fingerprints smears the ink.)

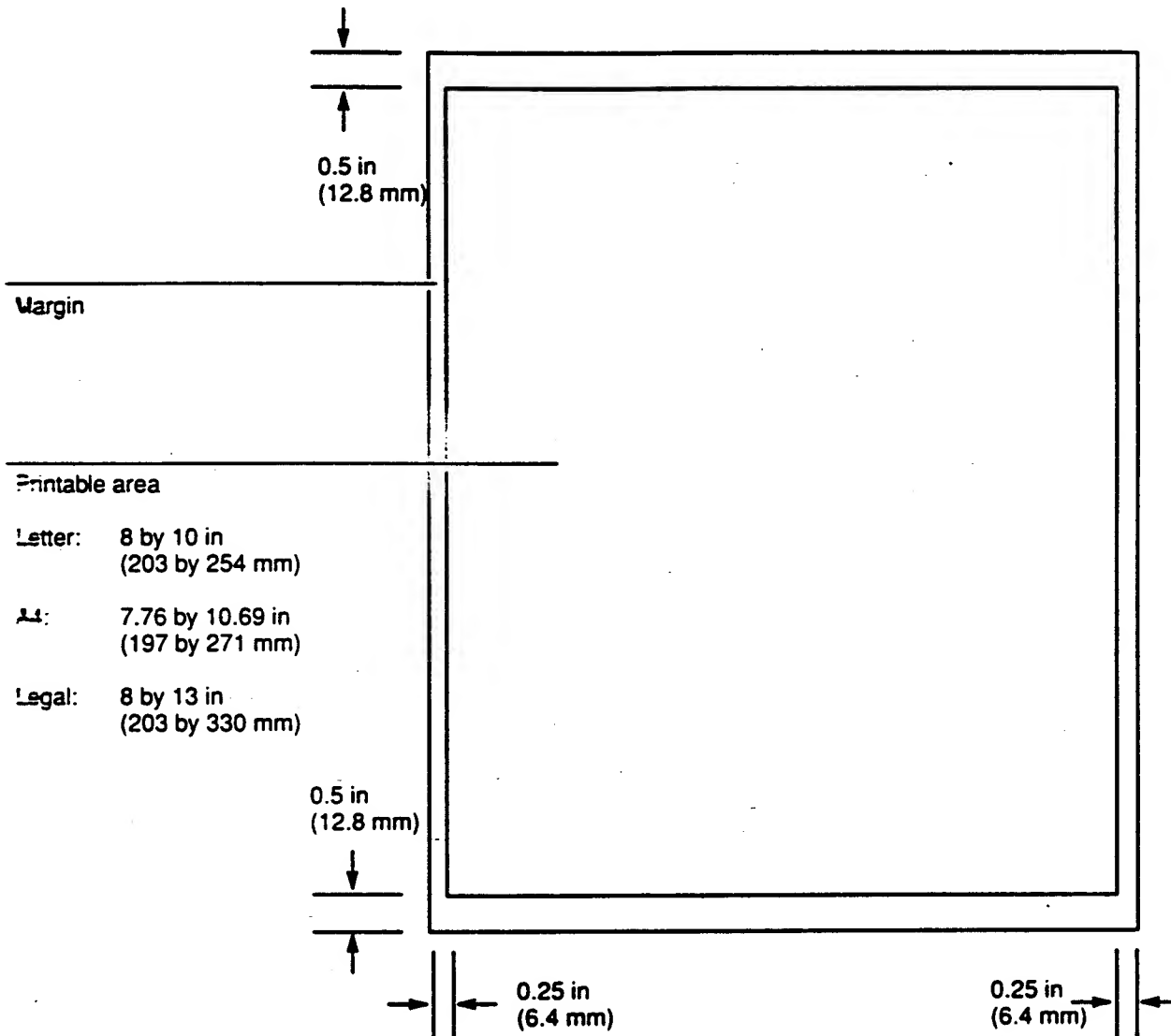
Avoid the following types of paper because they cause printer jams or can affect print quality:

- Paper heavier than 24 lb (90 g/m²) or lighter than 16 lb (60 g/m²) in the printer's input paper tray.
- Paper heavier than 36 lb (135 g/m²) or lighter than 16 lb (60 g/m²) in the optional 500-sheet paper tray.
- Paper with cutouts or perforations.
- Inkjet paper or transparency film other than the recommended type.
- Multiple part forms.
- Paper sizes in the paper tray other than those paper sizes listed in the "Technical information" chapter of this manual.
- Envelope sizes other than those recommended in this manual.



Printable area

The default printable area for your HP DeskJet 1600C or 1600CM printer is shown below. Most software application packages allow you to specify where printing will occur on the page by setting margins or column widths. As you set margins or columns through your software package, be sure to keep them within the printer's printable area. Refer to the "Technical information" chapter for other paper information.



Printing on glossy paper

Always select HP Glossy paper type in your software before printing on glossy paper. Selecting HP Premium Glossy paper (C3836A letter-size or C3837A A4-size) tells the printer to make multiple printing passes that will produce the intensity of ink needed for vibrant images. You may wish to experiment first with area fills (solidly colored areas) to produce optimum results (ink bleeding may occur with area fills that are too dense). Selecting the proper paper type in your software lets the printer create the best quality output.

Be sure to load the glossy side down in the paper tray when printing.

Important

Always have 5 to 10 sheets of paper installed in the paper tray. If you only have one or two sheets of glossy paper to print, you can place the sheets on top of plain paper loaded in the paper tray.

Printing on transparencies

Always select HP Transparency paper type in your software before printing on transparency film.

Important

Use only HP Premium Transparency Film (C3834A letter-size or C3835A A4-size) when printing with transparencies. Using any other transparency film causes the transparency film to jam in the printer.

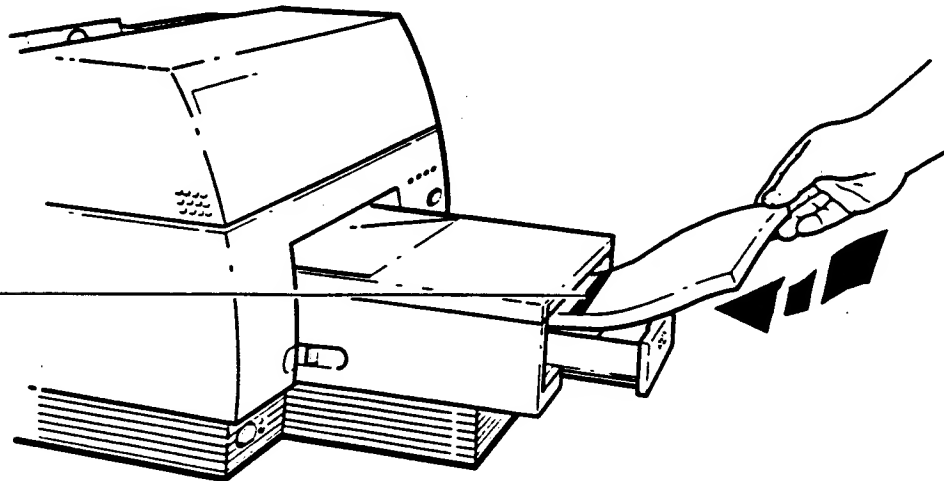
A *maximum* of 80 transparencies can be loaded into the paper tray, printed, and stacked.



Loading transparencies

HP Premium Transparency Film has a white strip at the top of each sheet. This strip is used by the optical sensors in the printer to determine if there is transparency film loaded.

When loading transparency film into the paper tray, insert the film with the white strip physically on top and on the end of the film going into the printer first.



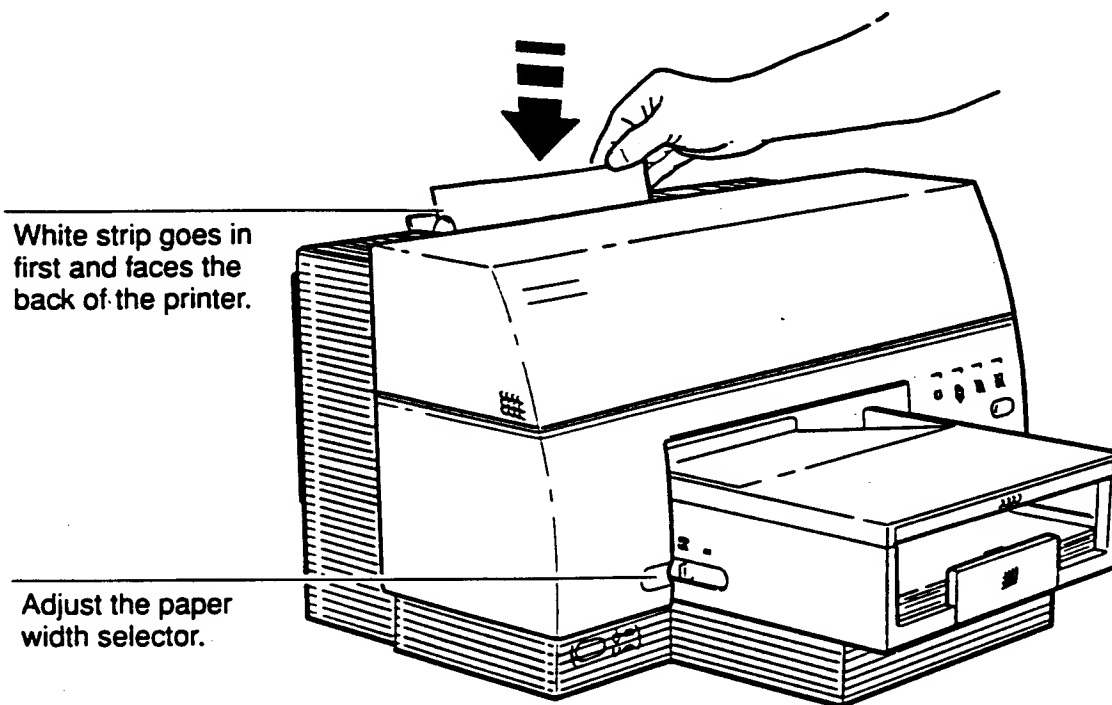
Remember to close the top cover before starting any print job.



When loading transparency film singly into the manual feed slot, insert the film with the white strip down, facing the back of the printer.

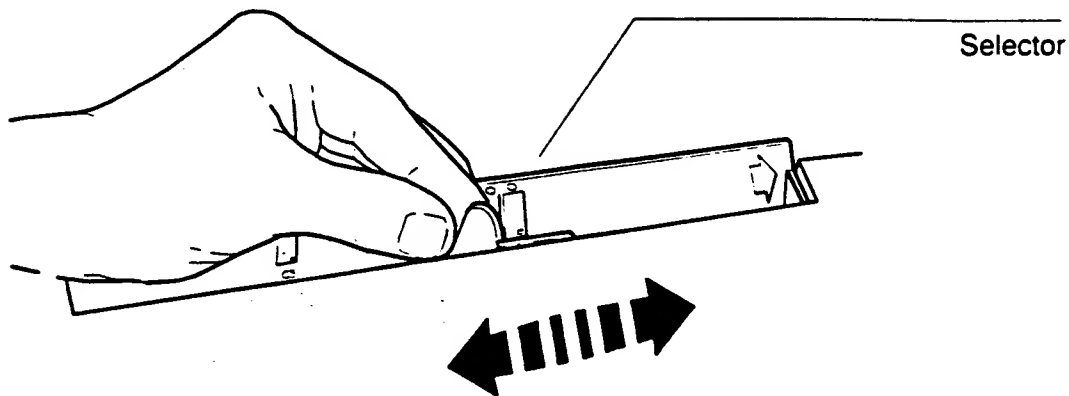
Important

When using the manual feed slot, you must also adjust the paper-width selector on the front of the printer for the width of the paper you are manually loading. The wrong paper width setting could result in a paper jam.

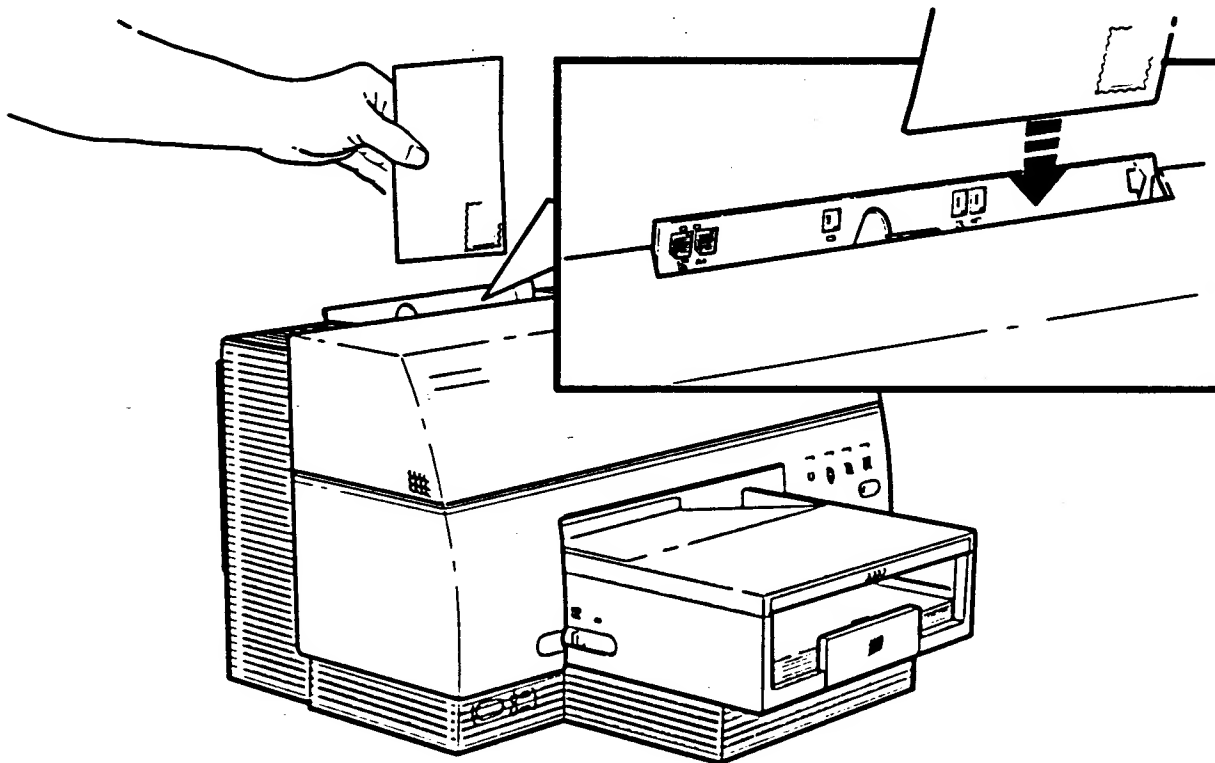


Loading envelopes

1. Adjust the envelope/paper size selector at the top of the printer for the item you want to load.



2. Insert the envelope (stamp corner at lower right facing the front of the printer) into the manual-feed slot at the top of the printer until the printer physically grabs it and the Manual Feed light goes off.



Loading label stock

CAUTION

To prevent paper jams and possible damage to the printer, use the following guidelines when printing labels:

- Use only recently manufactured labels (old labels become brittle).
- Use paper-based labels only (do not use clear plastic labels).
- Do not feed any label sheet with missing labels.
- Do not print within 0.5 inch (12.7 mm) from the top edge of the label sheet.
- Label stock with spaced labels can also cause paper jams that could damage your printer. Use only HP LaserJet or DeskJet approved label stock which can be ordered from your local authorized HP dealer.

Use

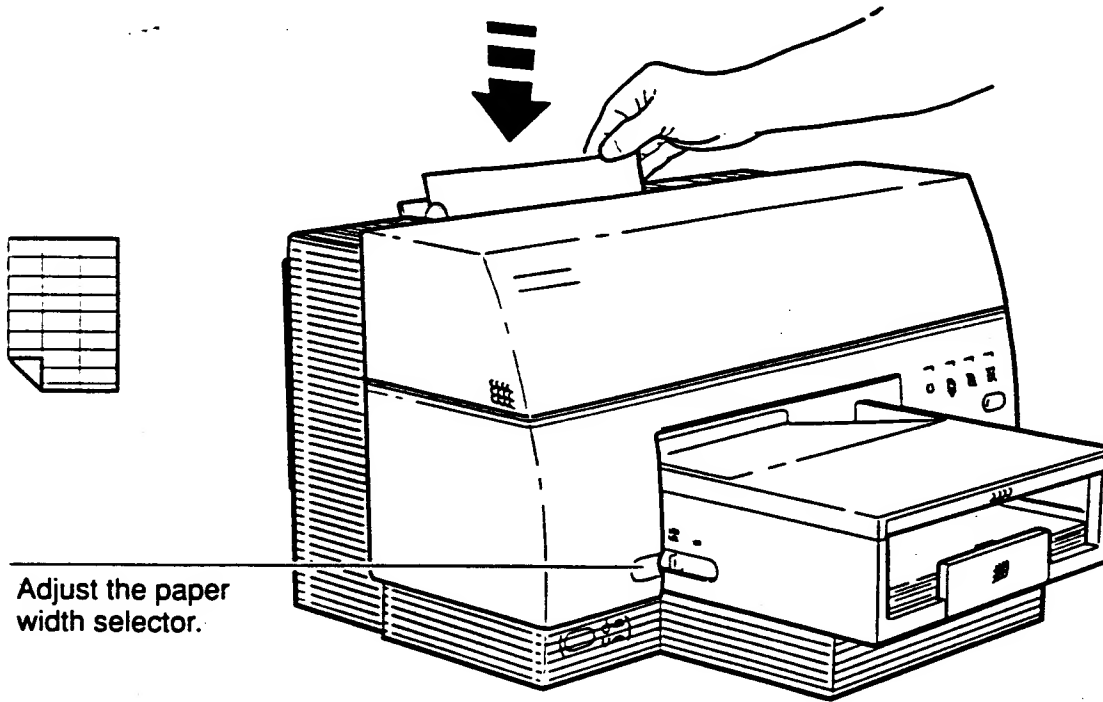


Do not use



Using paper and print cartridges
Loading envelopes or label stock

1. For label stock, adjust the envelope/paper size selector.
2. Insert the sheet with the print side facing the front of the printer into the manual feed slot at the top of the printer.



What you need to know about print cartridges

Your printer operates with four print cartridges: yellow, magenta, cyan, and black. Except when printing the self test, all four cartridges must be installed before you can print. When the printer is turned on, the top cover is opened, or a new print cartridge is installed, the printer automatically performs a calibration procedure. This procedure will last 5 to 15 seconds per new cartridge. Once a print cartridge has been successfully calibrated, the results are stored in the printer's memory until a new cartridge is installed and the procedure is performed again.

When printing *text only* on Letter/A4-size paper at approximately 5% density, ink lasts about 800 to 900 pages using Normal and Presentation print quality mode and 1600 to 1800 pages using EconoFast mode.

When printing *graphics* on Letter/A4-size paper, using equivalent amounts of each color, ink lasts approximately:

- 1850 pages per set of color cartridges at 15% density
- 275 pages per set of color cartridges at 80% density covering a full page.

If you use one color more than others, you will need to change that print cartridge more often.

If a print cartridge is new or has been installed and not used for a long time, run the self test first before starting your print job.

Remember, each print cartridge must be snapped fully down and forward into the stall.

Determining ink color (for users with color-vision deficiencies)

The printer uses four print cartridges. The colors, as installed from left to right, are yellow, magenta, cyan, and black. Each cartridge has a part number that uses a letter designation for the color of the ink. This part number is located on the front label of the print cartridge (shown on the next page).

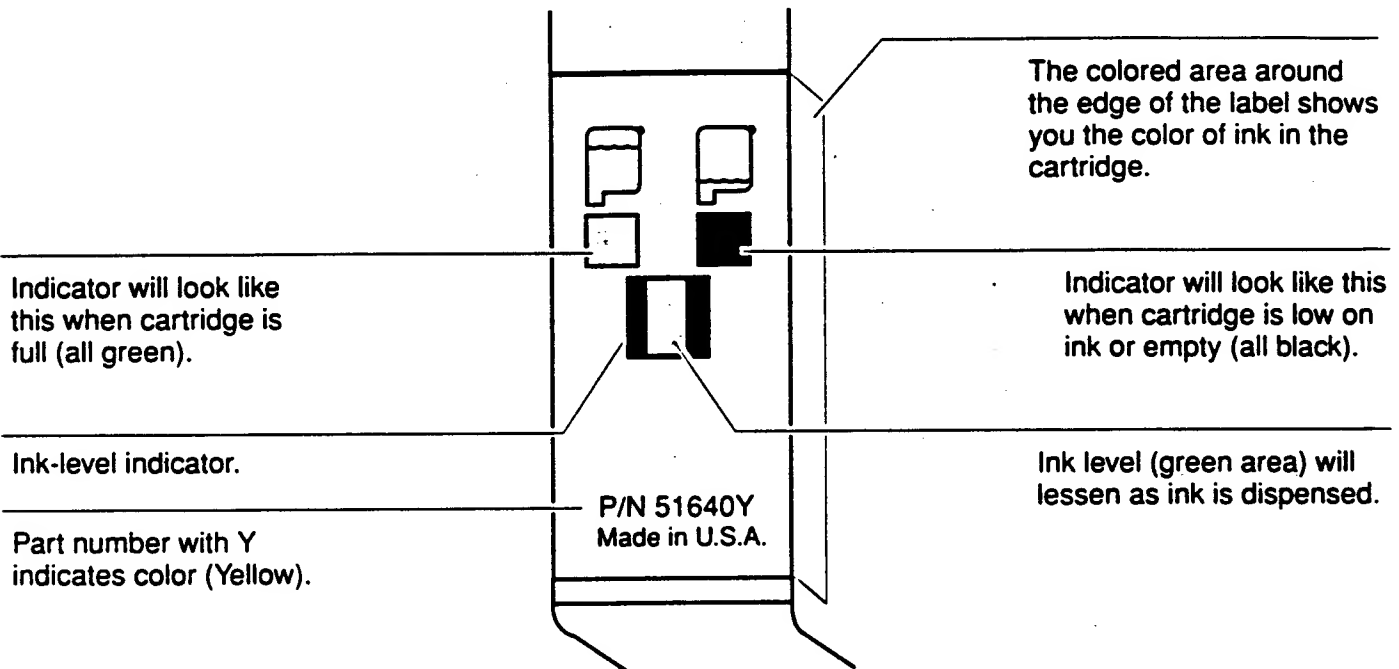
1st Cartridge	2nd Cartridge	3rd Cartridge	4th Cartridge
Yellow	Magenta	Cyan	Black
51640Y	51640M	51640C	51645A

Ink-level indicator

You can check the amount of ink in each cartridge by looking at the ink-level indicator.

As ink is dispensed from the cartridge, the green area in the ink-level indicator (all green when full) will lessen and you will see more black area.

The ink-level indicator is only an approximation of the amount of ink left in the cartridge. The illustration below shows the label on the front of a cartridge containing yellow ink.



Using printer software



Software priority

The priority of software options for your printer is application software, then printer-driver software, then printer control panel software. The printer options you choose in your application software will override the options selected in the printer-driver software and the printer control panel software. Options that you choose in your printer-driver software will also override the printer control panel software.

As an example, if you have EconoFast selected as your default Print Quality mode in your printer driver and then select Normal as your Print Quality mode in your application software, the printer will print your document in Normal mode.

Getting to your printer-specific options

In order to change printer settings in the Windows environment, select either **Print...** or **Printer Setup...** in the File pull-down menu of your application software: in the Macintosh environment, select **Page Setup** and **Print**. From there, many software application menus use different paths to get to your specific printer features.

To get to options that are specific to the HP DeskJet 1600C or 1600CM (such as color adjustment, print quality, paper type and others) in your printer driver, select the options as shown below:

- In your Windows driver — Select **Setup...**
- In your Windows PostScript driver — Select **Setup...**
- In your Macintosh driver — Choose **Print...**

Using the HP DeskJet 1600C Control Panel

The HP DeskJet 1600C Control Panel is a DOS software program that uses control-panel options to make changes in your print setup. The control-panel menu contains the following options:

Trays

- Select **Letter**, **Legal**, or **A4** size paper.
- Select **Plain** paper, **Premium** paper, **Glossy** paper, or **Transparency** film.
- Select either the printer's **Paper Tray** or the optional 500-sheet **Lower Tray** (if installed) from which to feed paper into the printer.
- **Tray Lockout** lets you select either the **Paper Tray** or **Lower Tray** to be locked out. An example of this feature is that you can put glossy paper in the paper tray (for times when you want to create high-quality print jobs), then select **Paper Tray** in the control-panel software to be locked out. The printer will then feed paper from the optional 500-sheet lower tray. When the lower tray runs out of paper, the printer will stop because you have locked out the paper tray and you will not waste any of your glossy paper.

Page Setup

- Select an orientation of **Portrait** or **Landscape**.
- Set the number of lines per page using **Lines/Page**.
- Select the number of copies you want to print using **Copies**.

Print Quality

- Use **Print Mode** to select **Presentation** for presentation-quality graphics, **Normal** for great-looking black and color print jobs, or **EconoFast** to save ink and quickly print draft copies.
- In the **Color Mode** box, select **Color** for black and color print jobs or choose **Print in Grayscale** to print black and white documents and to print color documents for photocopying on a black and white copier.

Fonts

- Select font type from the **Symbol Set** submenu.
- From the **Pitch** submenu, you can select from a list of pitch sizes. Use 10 characters per inch (cpi) if your default paper size is Letter or Legal. Use 12 cpi for A4-size paper.

Language

- Use the **Default Language** submenu to select either **PCL** or **PostScript** for your printer language. Select **Optional Language** only if the instructions for an optional language SIMM directs you.
- Select **On** in the **Context Switch** submenu to allow the printer to determine which printer language it is receiving. Select **Off** if you are using PostScript and are getting garbled or incorrect printing.

Other settings

- Use **Fast** in the **Centronics Type** submenu if you are using a newer computer. Use **Standard** if your computer hangs or gives you a "port not recognized" message with **Fast**.
- Select **LPT1**, **LPT2** or **LPT3** in the **Printer Port** submenu to connect your printer to the computer's printer port. Once a port is connected, the other ports are grayed out (not selectable).
- Select **On** in the the **Energy Star** submenu and the printer will reduce its energy consumption after 60 minutes of idle time. With **Energy Star** on, it will take slightly longer to print the first page due to printer warm up. Select **Off** for normal power levels and faster first-page-to-print time.
- Select **On** in the **Page Protect** submenu if you are getting out-of-memory errors. Use this feature only if you want to print multiple copies of extremely complex pages. **Page Protect** is used for PCL printing with 8 megabytes or more of memory in the printer and will ensure that almost all of your documents will print.

Using the Windows Status Monitor

The Windows Status Monitor lets you view information about your printer at any time, or if there is a problem with your printer, automatically brings up a status window to make you aware of the problem. To check the status of your printer:

1. Double click the program icon labeled **Status Monitor**.
2. Select **HP DeskJet 1600C on ...** (the computer port your printer is connected to).
3. Select **Printer Status...**

The Options section at the bottom of the window lets you choose how you want the Windows Status Monitor to alert you to possible problems. Options include:

- Display status messages.
- Play sounds with messages.
(Individual messages may or may not have sounds.)
- Error messages always on top.
- Run Status Monitor at Windows startup.

The table below lists the messages that may appear in the Status Window:

Printer status messages	Printer problems you can correct (error messages)
Printer ready. Printer printing. Printer paused.	Close (back/top) cover. Load paper into (lower/paper) tray. Insert sheet into manual feed slot. (Yellow/Cyan/Magenta/Black) print cartridge not registering. Remove and reinsert. (Yellow/Cyan/Magenta/Black) print cartridge is out of ink. Clear paper jam from (lower/paper) tray. Clear paper jam from manual feed slot.

Troubleshooting

Checklist for printer problems

If your printer will not print, make sure that:

- The top cover is closed (Ready light will be off if the cover is not closed properly).
- Tape is removed from the print cartridges (Check Print Cartridges light will be flashing) and nozzles are not clogged (Check Print Cartridges light will be on).
- All four print cartridges are properly installed (are snapped fully forward). If they are not properly installed, the Check Print Cartridges light will be flashing. If you are printing a self test and the print cartridges are not snapped fully forward, the cartridge carriage will move and cause the print cartridges to jam against the inside of the printer. In this case, both the Check Paper and Check Print Cartridges lights will be flashing. Once you fix this problem, close the top cover and press the blue front-panel button.
- Print cartridges are not out of ink (Check Print Cartridges light will be on if this condition is not met).
- Paper is loaded fully forward in the printer's input tray (Check Paper light will be on if this condition is not met).
- A sheet of paper or an envelope is fully inserted into the manual feed slot when manually loading paper (the Form Feed/Manual Feed light will flash when this condition is met).
- The interface cable is a quality cable and is properly connected. Also, using the HP DeskJet 1600C Control Panel software utility requires a bidirectional interface cable that complies with IEEE-1284 specifications (all pins are connected). Refer to the Ordering Information section of this User's Guide for ordering the proper cable.

If the printer still does not print, use the table in the following pages to troubleshoot your problem.

If the Check Paper light is on and *your printer has a paper jam*, check the following items:

- The top cover is closed.
- The paper-width selector is set for the paper width you are using.
- The proper size paper is being used.
- Paper is loaded fully forward in the paper tray.

If the printer still indicates a paper jam, use the table in the following pages to troubleshoot your problem.

Troubleshooting your printer

Printer Indications	Possible Problems	Solution
Printer does not print. Ready light is off.	Printer is turned off or top cover is not closed.	Turn printer on. Close top cover. Also refer to the "Checklist for printer problems" at the start of this chapter.
Printer does not print. Ready light is flashing.	Print job is hung up.	Press the blue front-panel button. The printer will print whatever is left in its memory and then wait for the next print job.
Printer does not print. Form Feed/Manual Feed light is on.	Printer has data ready to be printed.	Press the blue front-panel button to print the data.
Printer does not print. Manual Feed light flashing.	Printer is waiting for paper to be manually fed.	Insert paper into the manual feed slot at the top of the printer or deselect Manual Feed mode in your printer software or press the blue front-panel button to clear the manual mode.
Check Paper light on.	Paper trailing out of paper. Paper is misfed into printer. Paper not fully inserted into tray	Load paper into paper tray using the section in chapter 1. On a misfeed, the paper will be partially fed into the printer before the printer will stop. Open the top cover and pull the paper out. Then make sure the paper is correctly inserted in the paper tray. Load paper into paper tray using the procedure in chapter 1.
Check Paper light flashing.	Paper is jammed in printer. HP Transparency paper was loaded with the wrong end going in first, causing a paper jam. If the printer has only one or two sheets of paper in the paper tray, the printer may not pick the paper properly, causing a paper jam in the printer.	Remove the jammed paper from the printer using the "Clear jammed paper" procedure in this chapter. Remove the paper jam and load HP transparency paper in the input tray with the white strip going in first and on top. If loading manually in the manual feed slot, the white strip is on the bottom and toward the back of the printer. Remove the paper jam and install more paper in the paper tray.

This table continues on the next page.



Printer Indications	Possible Problems	Solution
Check Print Cartridges light is on.	Print cartridge is clogged or out of ink.	Refer to the "Print cartridge problems" section in this chapter.
Printer does not print. Check Print Cartridges light is flashing.	One or more print cartridges not fully inserted into the stall or tape is not removed from cartridge nozzles causing an electrical connection problem.	Re-install print cartridges using the "Load the print cartridges" procedure in chapter 1.
Glossy paper curls excessively.	Printer not set for HP Glossy paper.	Glossy paper needs less heat. To keep it from curling, set the paper type to HP Glossy, then wait two minutes for the heater temperature to stabilize.
Ink tends to bleed on the paper or the print seems fuzzy. The paper has excessive cockling (wrinkled).	<p>You may be using the wrong paper.</p> <p>You may be printing on the wrong side of the paper.</p> <p>You may be printing on plain paper in Glossy or Transparency mode.</p> <p>You may not be printing within the specified environmental conditions.</p>	<p>Use paper that is supported and recommended by Hewlett-Packard.</p> <p>Verify you have loaded paper with the print side down in the paper tray or facing you in the manual feed slot.</p> <p>Change mode to Paper—Plain.</p> <p>Refer to the "Maintaining your printer" section towards the end of this chapter.</p>
Printer only prints black and white.	<p>Wrong color mode selected in your application.</p> <p>Computer is using a LaserJet driver which only has a black and white mode or defaults to black and white mode.</p>	<p>Look for setting that "sends color to the printer."</p> <p>Use a DeskJet 1600C or DeskJet 1200C printer driver.</p>
When printing, the left margin is shifted to the right; or the printer cuts off text and graphics before the right margin.	<p>Paper may not have been fed straight during manual feed operation.</p> <p>Software is not correctly set for the type of paper you are using.</p> <p>The paper-width selector may not be set for the width of the paper being used.</p>	<p>Be sure to manually feed paper into the printer as directed in "Loading envelopes" or "Loading label stock" sections in chapter 3.</p> <p>Correct the software setting.</p> <p>Set the paper-width selector for Letter/Legal or A4.</p>
Banding (poor print quality that appears as strips)	High density plots printed in Normal mode may show banding.	Switch the print quality mode to Presentation using your DeskJet 1600C or 1600CM printer software.

This table continues on the next page.



Troubleshooting
Printer operation problems

Printer Indications	Possible Problems	Solution
Printer does not print. Check Paper and Check Print Cartridges lights are flashing.	Print cartridges not snapped fully forward in stalls causing carriage jam. Paper has jammed in printer causing a carriage jam. The printer has a problem not related to print cartridges or paper.	Be sure print cartridges are snapped fully forward. Refer to "Load the print cartridges" section in Chapter 1. Check paper path for paper jam. Have your printer serviced. Refer to the "Getting help" section towards the end of this chapter.
When printing from Windows, your computer displays the message "The printer on LPT1: is not responding. . ."	Incorrect setting on the "Transmission Retry" dialog box.	Increase the setting to 900 and the message will go away. You can access this setting in the Control Panel:Printers:Connect dialog box.
Poor print quality (streaks, fading, bleed).	Clogged print cartridge nozzles.	Clear the nozzles. Refer to the "Print cartridge problems" section in this chapter.
Printer does not print entire file.	File is too large for printer's memory. (Landscape printing requires more memory than portrait.)	Reduce file size, print in portrait mode, or . . . If you have 8 megabytes or more of memory in your printer, set Page Protection in your Windows driver software to On, or . . . Add more memory to printer. Refer to "Ordering information" and "Installing printer options" sections of this guide.
Erratic or interrupted network printing.	A loop or an unattached cable may be in the network.	Follow the cables through the network to find the problem. If you are using BNC cabling, be sure all T-connector ends are connected with a cable or terminator.
In a few cases, normal graphics and scanned-image print quality are not good.	You may be using printer software other than what came with the HP DeskJet 1600C or 1600CM.	Use HP 1600C or 1600CM printer software for best results.
Paper repeatedly jams or printer tears leading edge or corner of paper.	Paper leading edge is damaged or bent. Paper is not lying flat.	Ensure paper is lying flat in the paper tray and is under the forward and rear tabs of the tray.
Popping sounds coming from printer.	You could be using paper that has been pre-printed with toner. Toner can damage the printer.	Stop printing immediately. Do not use paper that has been preprinted with toner (toner is used in devices such as laser printers and copiers). If you want to use preprinted forms or letterhead be sure they are preprinted using ink-based print.

This table continues on the next page.



Printer Indications	Possible Problems	Solution
PostScript language file does not print.	<p>You are using the DOS Copy command with the /B option.</p> <p>You are using the DOS print command.</p> <p>You may be on a network that sends a non-PostScript banner page to the printer before each print job. This may cause problems with the PostScript interpreter.</p> <p>You may be using the wrong application.</p> <p>You are sending a PostScript file from a Macintosh on a mixed PC and Macintosh network environment (language is set to PCL and Context switching is Off).</p>	<p>Your file may have a DOS end-of-file marker (control-Z) after the PostScript end-of-file marker (control-D). Use the copy command without the /B option.</p> <p>This command appends a form feed (control-L) to your PostScript language file which may cause a printing job to not print. Use the DOS Copy command without the /B option.</p> <p>Either turn off the banner page or alter the network to send a PostScript language banner page.</p> <p>Be sure your application can create and print PostScript language files.</p> <p>Set your Context switching to On.</p>
PostScript file does not print completely.	You may get a printed message: ERROR: limitcheck OFFENDING COMMAND: setpagedevice	You need more printer memory to print this image with the print quality and page size you chose in your driver.
<p>Print Screen generates a PostScript error.</p> <p>Trying to print an ASCII file from DOS generates a PostScript error.</p> <p>Redirecting a directory or file from DOS generates a PostScript error.</p>	The default language of the printer is set to PostScript in the HP DeskJet 1600C Control Panel.	Change the default language setting to PCL, then print the file using your word processor, or redirect your directory to a file, then print the file using your word processor.
Print Manager doesn't look or function correctly.	You have reinstalled Windows 3.1 and overwritten your new Microsoft Print Manager with the old one.	Reinstall your HP DeskJet 1600C ColorSmart Printing System for Windows from your disks.
Printing on A4 paper and the last two lines are not printing.	The paper-size switch on the side of the paper tray may be set for letter-size paper.	Set the switch in the A4 position.

Print cartridge problems

Important

If one or more print cartridges are not printing at all, you could have one of the following problems:

- The print cartridge could have a faulty circuit connection with the printer.
- The tape may not have been removed from the print nozzles.
- The print cartridge may be clogged.
- The print cartridge may be out of ink.

Faulty circuitry can sometimes cause streaks or faded colors to appear in your print job. Try reseating each cartridge to ensure good electrical connection between the print cartridges and printer, then perform the self-test procedure.

Occasionally, air bubbles or paper dust can clog one or more nozzles on a print cartridge. To clear the nozzles and restore print quality, perform the self test.

Run the self test

1. Make sure the printer is on.
2. Press the blue front-panel button, to start the self test and see if you have fixed the problem. (There will be a slight delay during the start of the self test while the printer clears the print cartridge nozzles. This process occurs every time the self test is started).
3. Compare your printing from the self test to the examples on the next page. Use the table that follows the examples to decide your next step.



Four color bars and lines on the self test should appear solid as shown below.
The intensity of the colors will vary depending on the type of paper (bond, special, or glossy) used.

Each bar is
a solid color

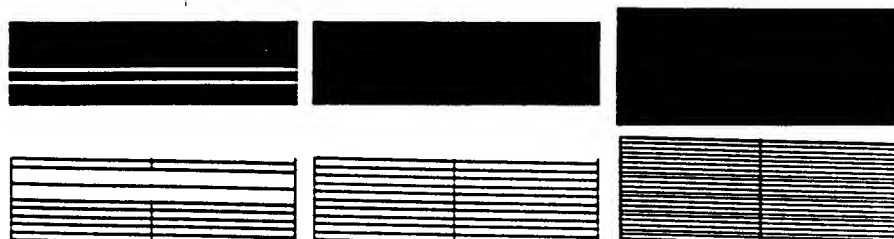
A



If any color bar has streaks as shown below, print cartridge nozzles may be clogged, and the corresponding cartridge needs to be cleared. Refer to the “Manually clear the print cartridge nozzles” procedure in the following section.

Streaks appear in
bars due to clogged
cartridge nozzles

B



Gaps also appear
in lines.



Printing	Result	Your Next Step
A	Problem fixed.	Try using your printer again.
B (any color bar incomplete)	Cartridge out of ink or cannot unclog.	If the self test does not unclog the cartridge nozzles, try clearing the nozzles manually (refer to "Manually clear the print cartridges nozzles" located after this self test procedure), then print a file from a software application.
Streaks appear in same area of all four bars.	Faulty print cartridge circuitry.	All four print cartridges use common circuitry. If a print cartridge is faulty due to common circuitry, it will show up on all four color bars. You can perform the self test with one print cartridge at a time. Do this until you isolate the bad print cartridge. Replace the bad print cartridge with a new cartridge.

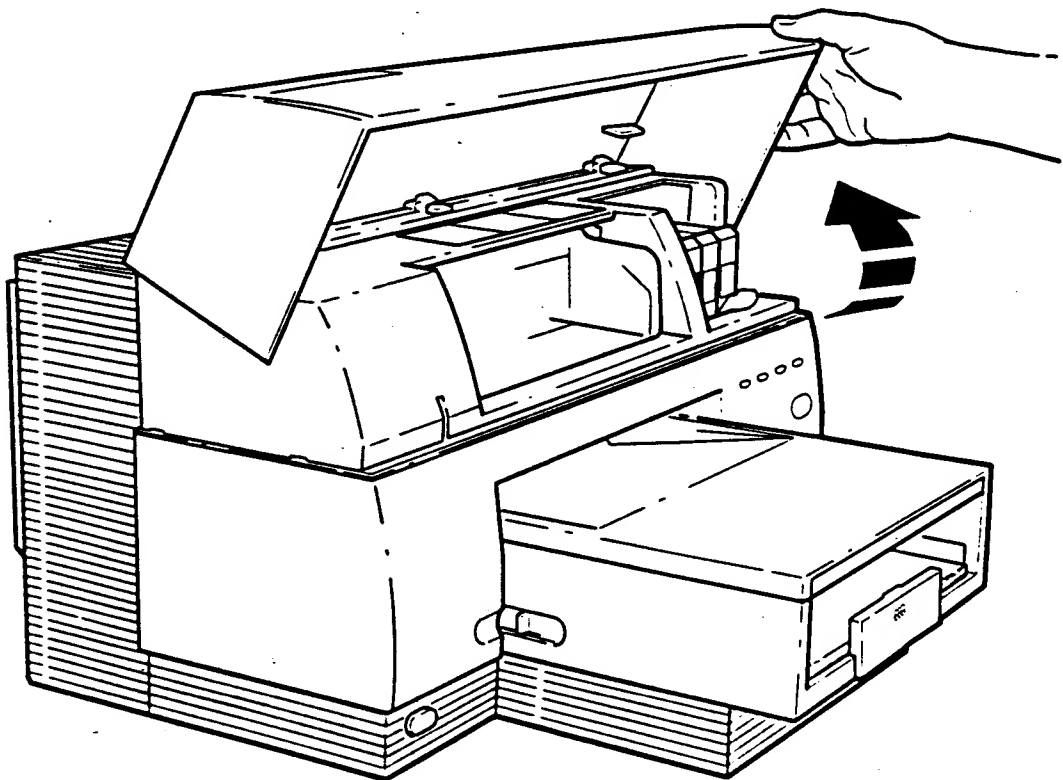
If you have performed the "Manually clear the print cartridge nozzles" procedure twice and you still get streaks in your print job, the print cartridge may be out of ink or cannot be unclogged. Replace the print cartridge.

If streaks still occur in your print job with the new print cartridge, have your printer serviced. Refer to the "Getting help" section in this chapter.

Manually clear the print cartridge nozzles

If a print cartridge is clogged (and running the self test will not clear it), try to clear it manually. Manually clearing the print cartridge produces a stronger clearing action on the print cartridge than the self test. This may clear the nozzles when the self test could not. If the print cartridge is still clogged after completing this procedure, replace the clogged print cartridge.

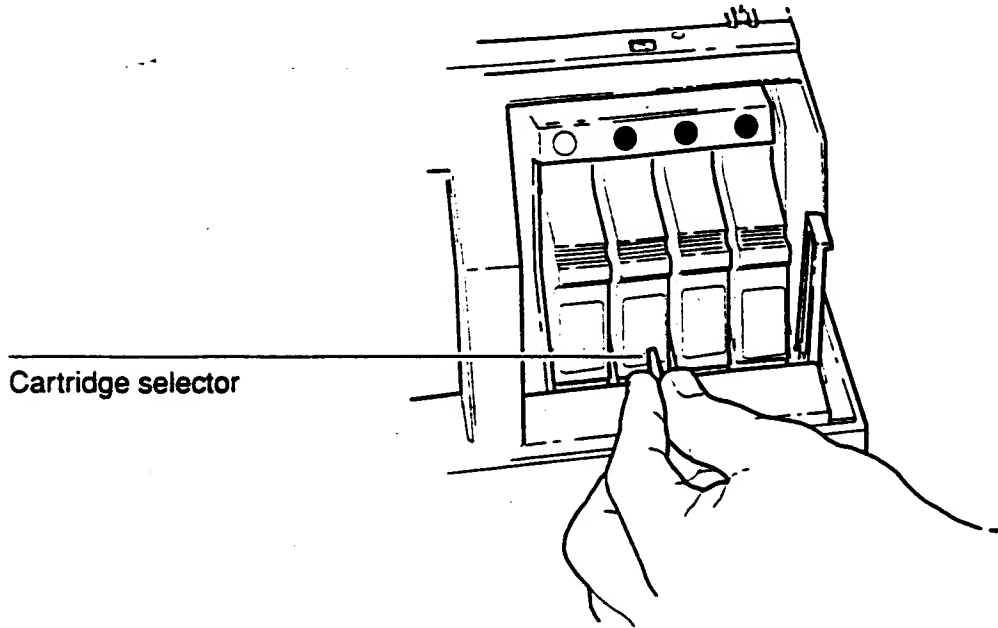
1. Look at your self test to see which cartridge (color) is printing incompletely.
2. Open the top cover.



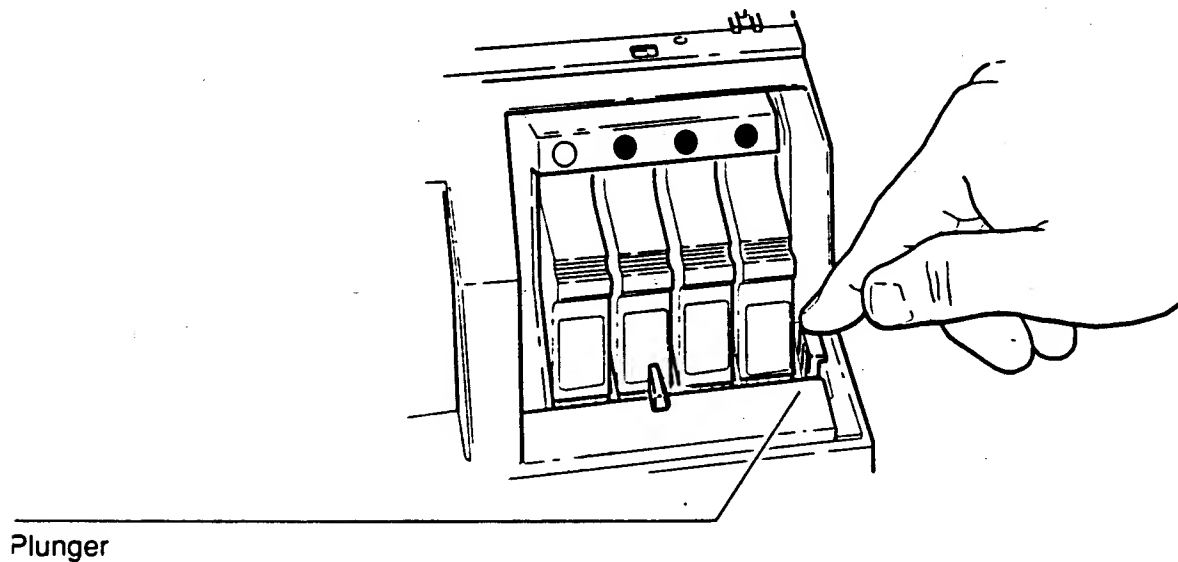
Troubleshooting

Print cartridge problems

3. Slide the cartridge selector to the print cartridge you want to clear. The illustration below shows the magenta print cartridge being selected.



4. Press the plunger on the side of the cartridge carriage down firmly once, then release.



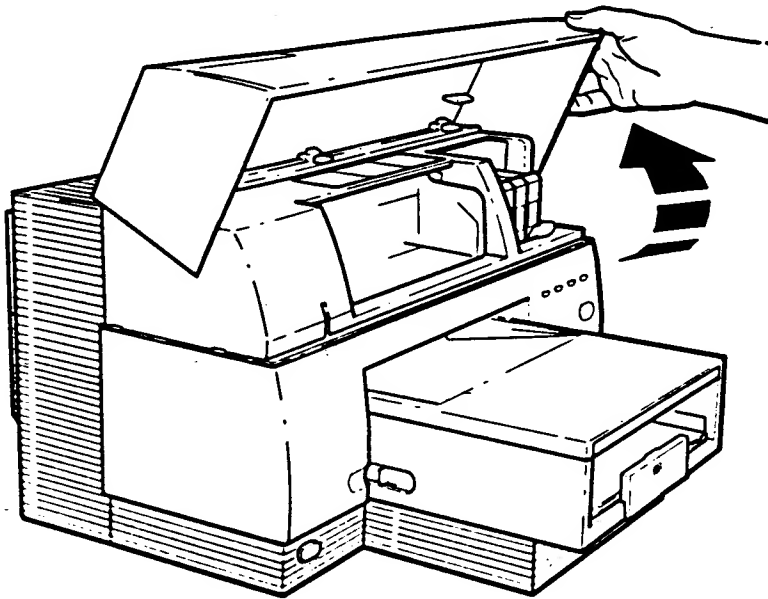
Clear jammed paper

Paper can get jammed inside the printer when:

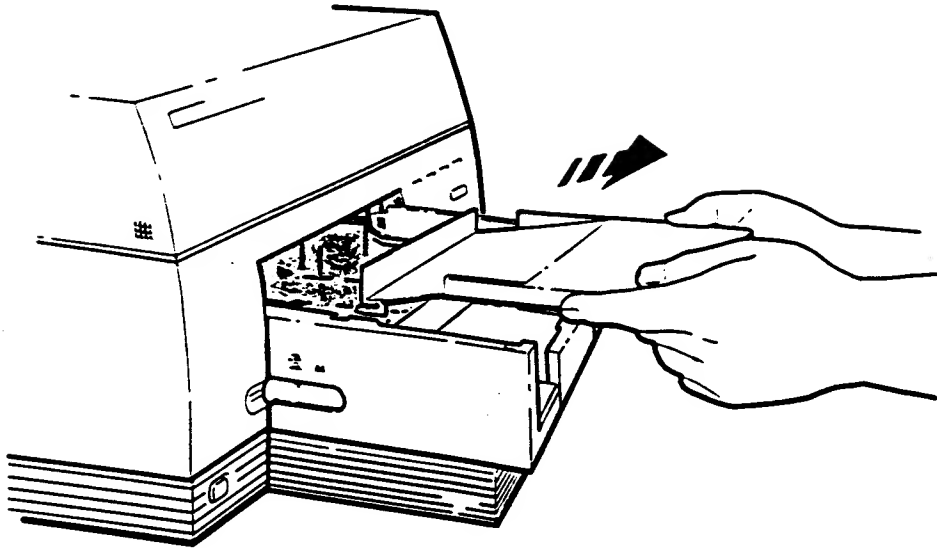
- Paper is not aligned properly in the printer.
- You are using the wrong type of paper.
- You are using the wrong paper size or weight.
- The paper-size selector on the front of the printer is set wrong when trying to manually feed paper in the manual-feed slot at the top of the printer.
- Paper is wrinkled or bent.
- The printer fails mechanically.

If paper becomes jammed in the printer, perform the following procedure.

1. Turn the printer off.
2. Raise the top cover. This action will make it easier to free the jammed paper.



3. Remove the top paper tray.



WARNING

The preheater and heater guard inside the printer are hot. Allow the printer to cool before you attempt to remove paper by hand or you may burn yourself.

CAUTION

Do not use tools to remove paper from the printer. This may damage the printer.

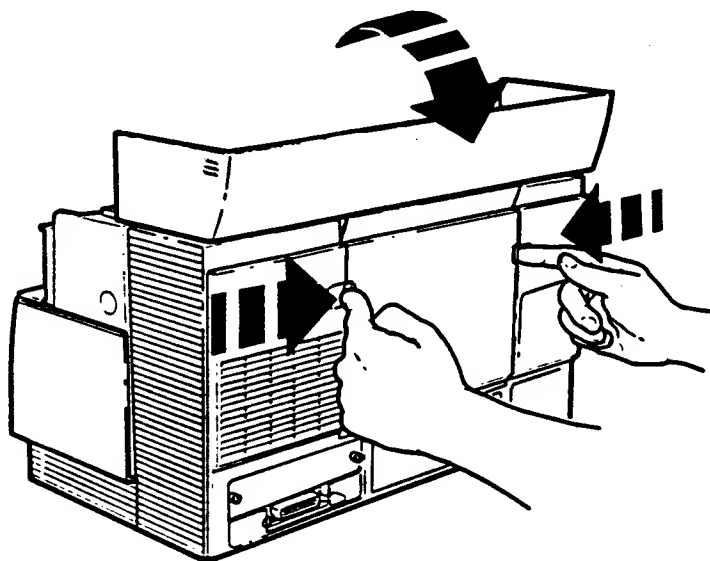
4. Remove the jammed paper from the front of the printer and replace the top paper tray. If you can not remove all of the jammed paper from the front of the printer, continue with step 5. Otherwise, close the top cover and turn the printer back on.



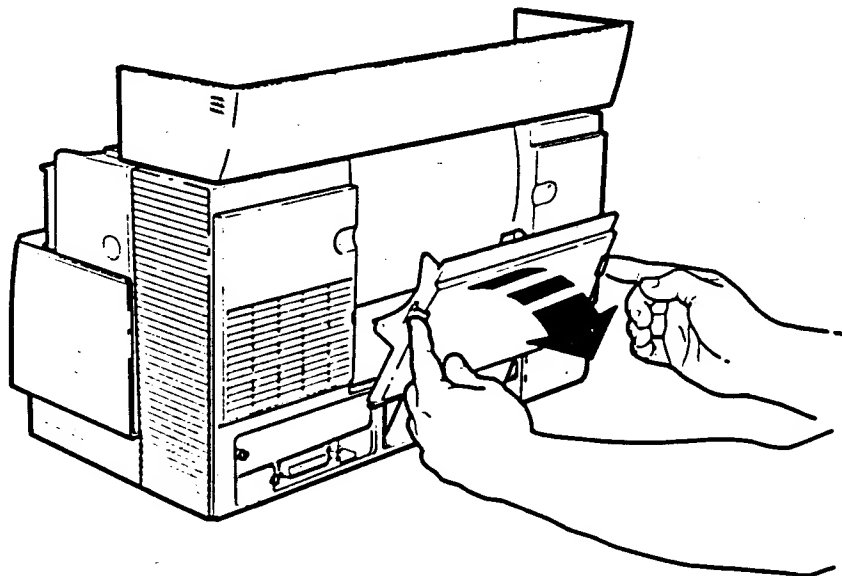
5. With the top cover still open, disconnect the power cord from the back of the printer and open the rear panel by pressing in the two tabs as shown below.

Important

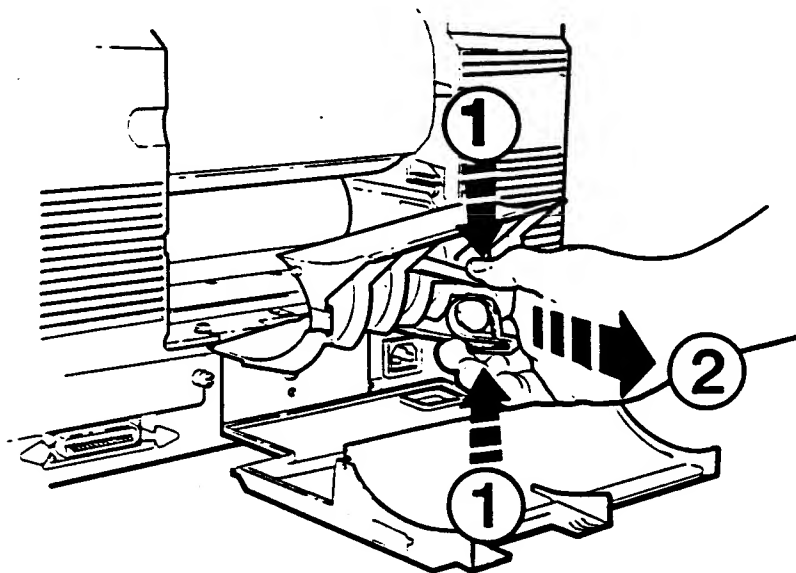
If you have the optional lower tray installed under your printer, you will need to open the outer and inner paper guides first, then the printer's rear panel. Refer to your Optional 500-Sheet Paper Tray Installation Instruction booklet.



6. Lower the rear door so that it lies down flat.



7. Grasp the paper plug by squeezing the green ring towards the thumb rest, then pull outward.



WARNING

The preheater and heater guard inside the printer are hot. Allow the printer to cool before you attempt to remove paper by hand or you may burn yourself.

CAUTION

Do not use tools to remove paper from the printer. This may damage the printer.

8. Remove the jammed paper from the back of the printer.
9. Replace the paper plug.
10. Close the rear door and top cover.
11. Connect the power cord into the back of the printer and turn the printer back on.



Maintaining your printer

Maintenance of the printer is limited to periodic cleaning. Your printer performs best in a clean and dust-free environment. Observe the following environmental conditions:

- Operate only at temperatures from 59 to 95 °F (15 to 35 °C) and in relative humidity from 20% to 80%.
- Store at temperatures from -40 to 158 °F (-40 to 70 °C) and in relative humidity from 5% to 95%.

Perform the following maintenance procedure as necessary.

- **Exterior maintenance** — Use a soft, damp, lint-free cloth to wipe dust, smudges, and stains off the printer's case.
- **Interior maintenance** — Inside the printer, residual ink may accumulate on the metal platen located between the pinch rollers. Periodically (depending on the volume and complexity of print jobs you do, or if you notice inadvertent color stains on your print job) clean the platen and pinch rollers with a damp, lint-free cloth. Use the procedure titled "Cleaning the inside of the printer" on the following page.



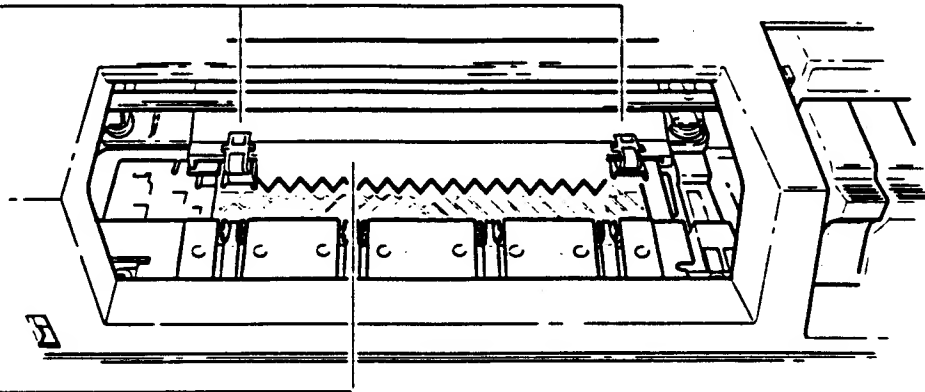
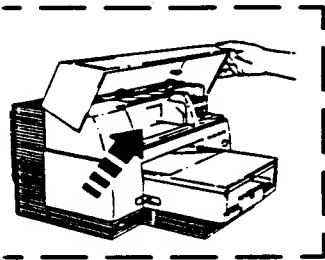
Cleaning the inside of the printer

WARNING

The metal platen between the pinch rollers has a sharp edge that could cause injury. Use care when cleaning this item.

1. With the printer on, insert a sheet of plain paper into the manual feed slot. The printer will feed the sheet forward for printing.
2. With the sheet in place, turn off and unplug the printer.
3. Raise the top cover and allow the printer to cool down.
4. Using a **damp** lint-free cloth, wipe the ink that has accumulated on the metal platen located between the pinch rollers (be sure to clean each tip). Also wipe the upper pinch rollers.

Clean pinch rollers



Clean platen

5. Lower the top cover, plug the printer in and turn it on. The printer will automatically eject the sheet of paper.
6. Repeat steps 1 through 4 using a second sheet of paper and a **dry** lint-free cloth.
7. Run the self test to clean up any residual ink.

Getting help

Hewlett-Packard has support services available to help you in case you have a problem with your HP DeskJet 1600C or 1600CM printer. Following are suggestions of places to turn for this support.

Before you call for customer support, make sure you do the following:

1. Review this "Troubleshooting" chapter.
2. Perform the built-in self test in the "Print cartridge problems" section of this chapter.
3. Make sure you are using the correct interface cables and software control panel settings, as explained in Chapter 4 (the self-test page will tell you what your settings are).
4. Check with your software vendor for help.

If you still have difficulty, begin by contacting the person who sold you your printer. Your sales representative or dealer is familiar with your needs, equipment, and software and should be able to provide you with the information you want.

Information for alternative support, such as CompuServe and Audio Tips, is given on the inside of the back cover of this User's Guide.



In North America, if you don't get the answers to your questions from your dealer or sales representative and your printer is under warranty, you may contact HP's Customer Support Center (CSC) line. The HP CSC staff can provide you with help by answering questions on your printer or accessories supplied with your printer. The HP Customer Support Center service is available from 7 am to 6 pm (Mountain Standard Time), Monday through Friday, except Wednesday (7 am to 4 pm). The telephone number is (208) 323-2551. If your printer is not under warranty, you can call 1-800-999-1148 (a per-call out-of-warranty support fee will be charged to your credit card) or call 1-900-555-1500 (there will be a per-minute charge for out-of-warranty support which will begin when you get connected to a customer support representative).

For the European Customer Support Center, refer to the numbers listed below. (You may be charged for a long-distance call by your local telephone company.)

Europe (English): (31) 20 682 8291

United Kingdom: 0891 391 000 or 010 (31) 20 682 8291

Germany: (00 31) 20. 681 .71.74

French, dialing from France: 3670.39.49 or (19 31) 20.681.82.60

French, dialing from Belgium or Switzerland: (00 31) 20.681.82.60

Netherlands: (020) 681.64.73 or from Belgium: (00 31) 20.681.64.73

Denmark: 009(31) 20.681.61.71

Finland: 990(31) 20.681.12.14

Norway: 095(31) 20.682.00.4

Sweden: 009(31) 20 681 80 25

Spain: (906)39.10.00 or 07-31.20.581.33.19

Italy: 00(31) 20.581.33.18

In Japan, call 81-03-3335-8333 (fax: 81-03-3335-8338) for the Customer Support Center. (You may be charged for a long-distance call by your local telephone company.)

Elsewhere, call your local Sales and Support office, listed in the Warranty Information booklet, to obtain service for your printer.

Should the printer require service, please refer to "Returning your printer for service" near the end of this chapter or your Warranty Information booklet for instructions.



When you call the HP's Customer Support Center line, please have the following information available to help us answer your questions more quickly.

- Identify what computer you are using and your printer serial number.

- Identify any special equipment or software you are using (for example, spoolers, networks, switch-boxes, modems, or special software drivers).

- Identify what cable you are using (by part number) and where you purchased it.

- Identify the interface you are using with your printer and any extra options (memory, PostScript).

- Identify the printer driver name and version, and software application name and version you are currently using.

Should the printer require service, refer to "Returning your printer for service" on the next page for instructions.



Returning your printer for service

If your printer requires service, contact the Hewlett-Packard dealer or sales representative where you purchased the printer. If you need to ship your printer, be sure it is packed in a protective carton. We recommend that you save the original shipping container for this purpose.

Important

The paper trays must be removed to properly pack the printer into the shipping container. Use the paper tray removal procedure at the end of this chapter. In-transit damage is not covered by the warranty, so you should always insure your shipment.

CAUTION

Remove your print cartridges from the printer. Print cartridges that remain in the printer may cause damage to the printer during shipping.

You can help assure effective servicing of your printer by following these guidelines:

1. Follow the troubleshooting instructions in this chapter to make certain the problem is in your printer and not the result of configuration problems or a malfunction in your computer or software. If possible, identify the defective function.
2. If repair is required, please include these items when returning the printer.
 - The power cord.
 - A description of the exact configuration at the time of the problem, including the interface cable, computer and peripherals, and software in use.
 - A brief description of symptoms for service personnel (samples of print quality problems are helpful).
 - If purchased through an HP dealer, a copy of the sales slip or other proof of purchase to establish the warranty coverage period.
 - Your name, address, and a phone number where you may be reached during the day.

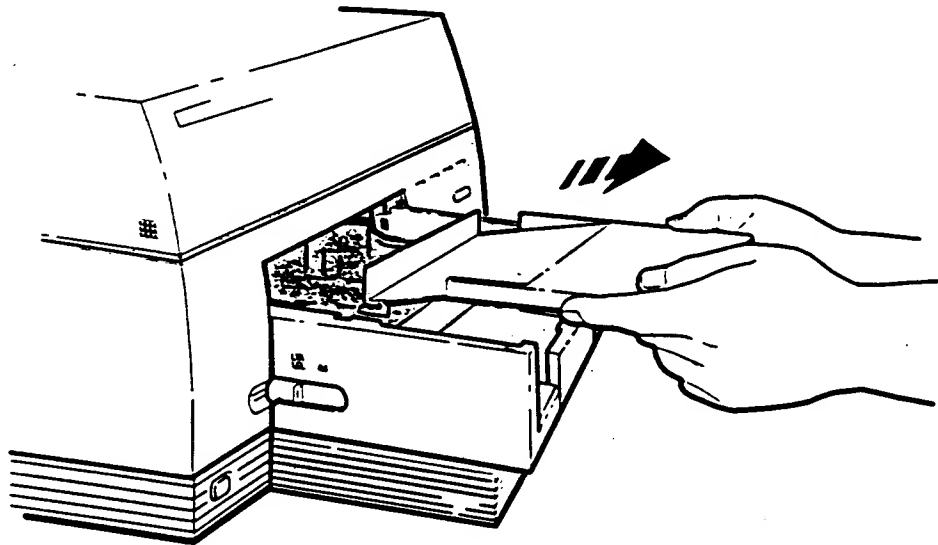


Removing the paper trays

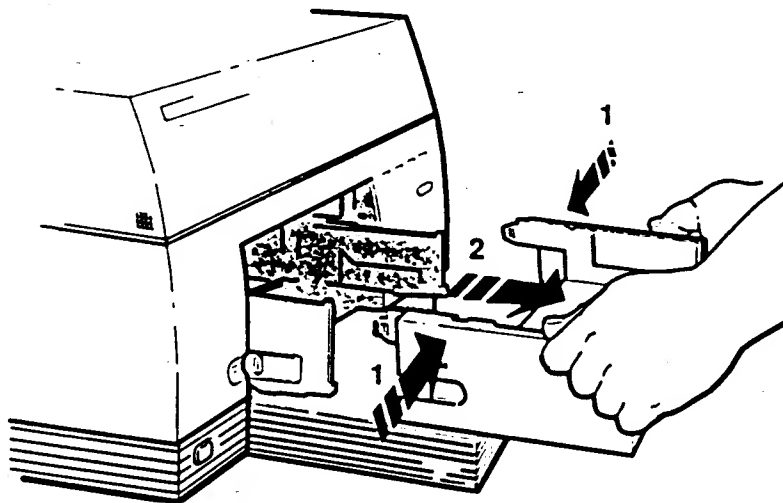
Important

Remove the paper trays when you need to repack the printer for shipment.

1. Remove the output tray.
2. Remove all paper from the input tray.



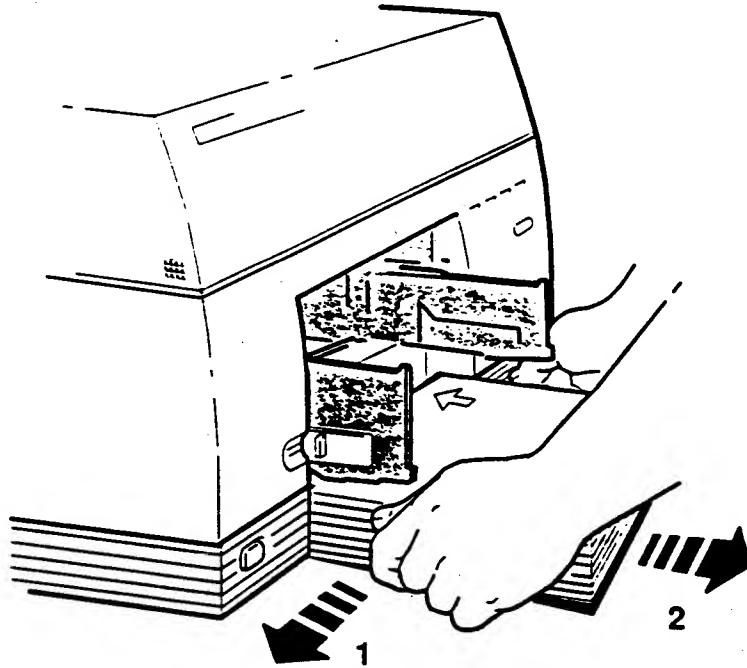
3. While pushing inwards on the sides of the input tray, pull the tray out towards you. (The right side will loosen first, then with a little harder pulling, the left side will loosen also.) Do not worry about breaking the printer.



Troubleshooting

Removing paper trays

4. Wrap your fingers under the bottom of the support tray close to the printer body as shown below and (1) bend both sides of the support tray slightly outward (you won't break it, and this will clear the restraining tabs). then (2) pull the tray toward you to remove it.



Installing printer options

Installing PostScript upgrade or additional memory

This section provides basic information on installing the PostScript card and, optionally, additional memory for your HP DeskJet 1600C printer.

Important

The PostScript board and/or optional memory may already have been installed. To determine if the board is present and how much memory is installed, print the self test.

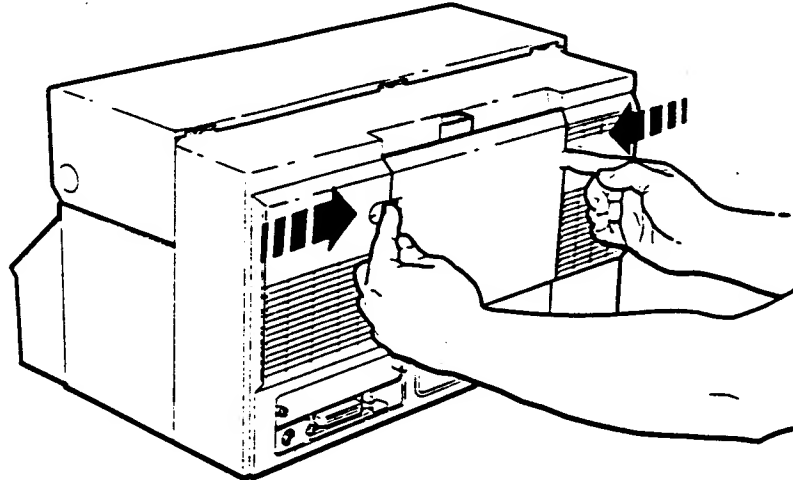
A minimum of six megabytes of memory is required to use PostScript printing. Four megabytes of memory comes standard with the printer and two megabytes of memory is included on the PostScript card. Refer to chapter 2 for guidelines for additional memory.

CAUTION

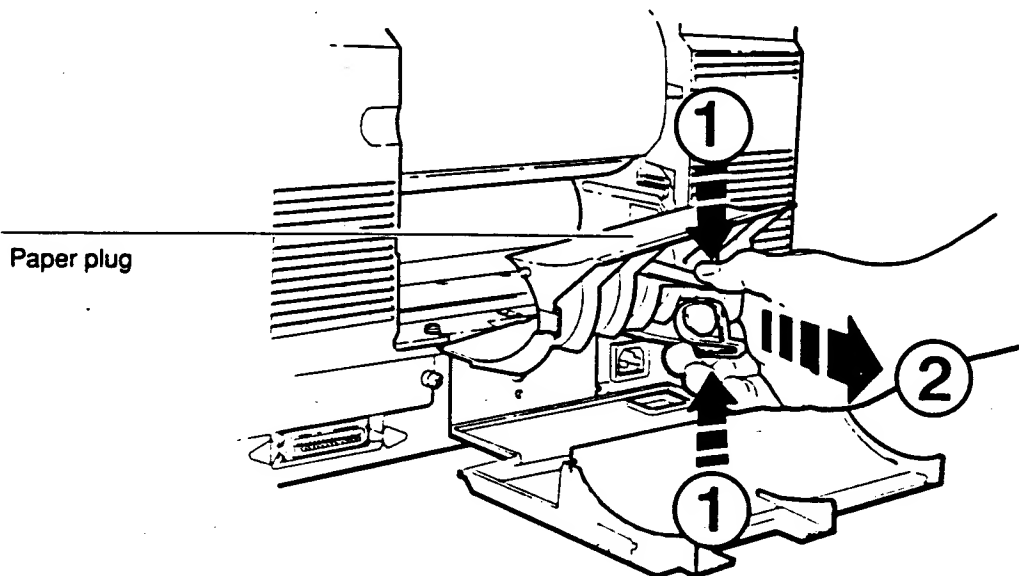
Because the PostScript card and memory expansion card contain parts that are easily damaged by small amounts of static electricity, you need to take precautions such as using grounding devices and maintaining contact with any bare metal surface on the printer while handling the cards. Handle the cards carefully at all times. Avoid touching the card components or circuit paths. Be sure to replace the memory expansion slot cover after installing the cards to prevent dust from accumulating inside the printer.



1. Turn off the printer and remove the power cord.
2. Open the rear panel by pressing the tabs as shown below.

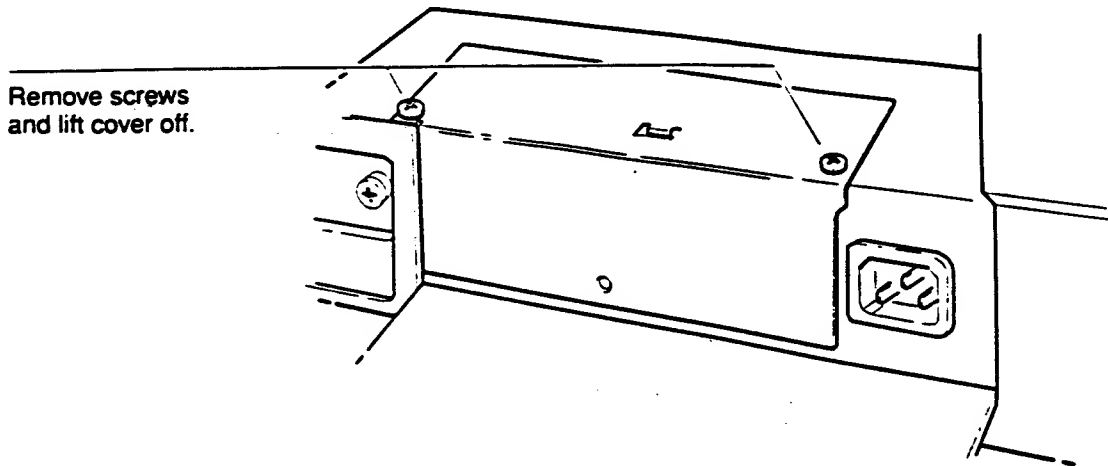


3. Remove the paper plug by squeezing the green ring towards the thumb rest, and then pulling outward.



Installing printer options
PostScript and memory

4. Using a flat-blade screwdriver, remove the memory expansion slot cover.



There are three Single In-line Memory Module (SIMM) slots. As you look at the slots from the back of the printer, the slot closest to you is slot 1, followed by slot 2, then slot 3. A memory SIMM can be installed in any of the three slots.

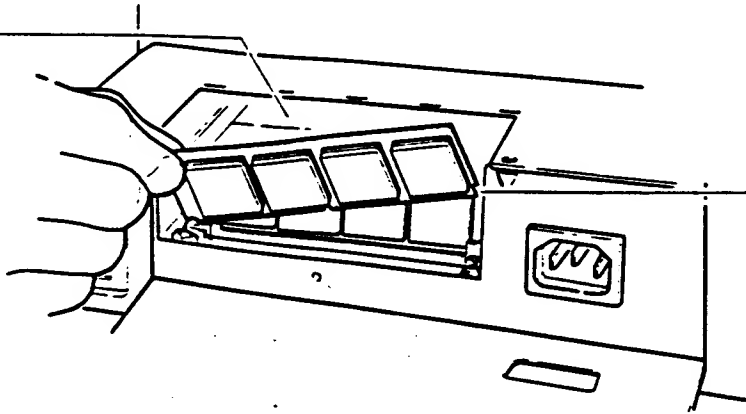
If your printer is set up for PostScript, slot 3 will have a PostScript SIMM already installed. While a memory SIMM can be installed in any slot, a PostScript SIMM can only be installed in slot 3.

5. Open the memory expansion or PostScript upgrade kit package that you purchased and remove the SIMM card.



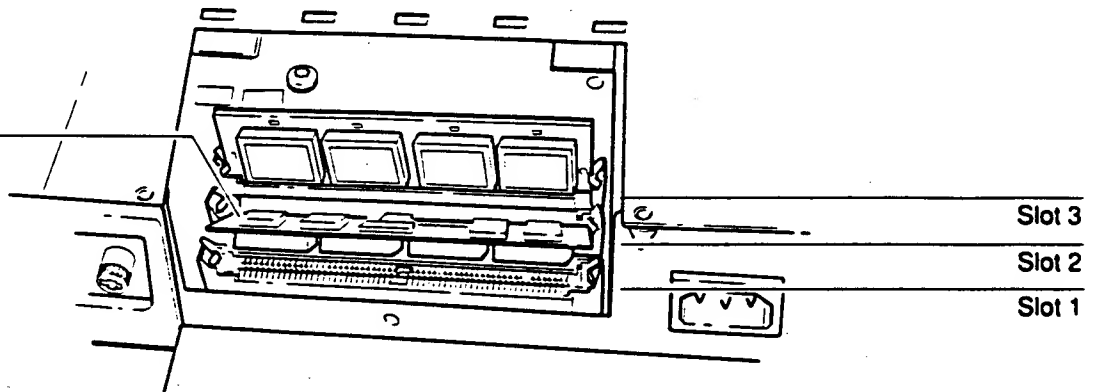
6. Insert the SIMM card at a 45° angle into a SIMM slot. The notched end must be on the right side.

Install SIMM card.



Notched end on right side.

SIMM card at 45° angle.



Slot 3

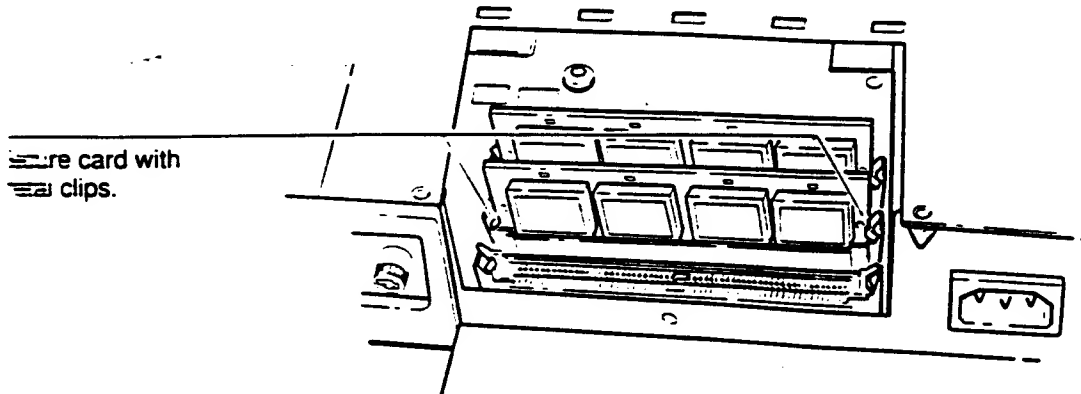
Slot 2

Slot 1




Installing printer options
PostScript and memory

7. Rotate the SIMM card to a 90° angle (vertical). Ensure that the card is secured by a small metal clip at each end.



8. Replace the memory expansion slot cover and install the two screws to secure the cover.
9. Replace the paper plug, close the rear panel, and attach the power cord.
10. Turn the printer on and perform the self test. The self test will determine if the PostScript card or memory cards have been installed correctly and print a summary of the memory capacity and PostScript installation. A PostScript configuration page will also be printed.



Technical information

Regulatory notices

FCC Statement (U.S.A.)

The United States Federal Communications Commission (in 47 CFR 15.105) has specified that the following notice be brought to the attention of users of this product.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interferences by one or more of the following measures:

- reorient the receiving antenna
- increase the separation between the equipment and the receiver
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- consult the dealer or an experienced radio/TV technician for help

The user may find the following booklet prepared by the Federal Communications Commission helpful: How to Identify and Resolve Radio-TV Interference Problems. This booklet is available from the US Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

CAUTION

Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this equipment not expressly approved by the Hewlett-Packard Company, may cause harmful interference and void the FCC authorization to operate this equipment.

Installing any HP JetDirect Print Server in an FCC Level B product results in an FCC Level A Composite System as defined in the FCC Rules and Regulations.

Telecommunications General Approval (UK)	Pursuant to Section 22 of Telecommunications Act of 1984 this product is approved for secondary attachment to approved primary attachment devices connected to the telecommunication network under the General Approval (NS/G/1234/5/100003).
DOC statement (Canada)	<p>Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limits applicables aux appareils numeriques de la class B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.</p> <p>This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.</p>
Geräuschemission	LpA < 70 dB am Arbeitsplatz im Normalbetrieb nach DIN 45635 T. 19
VCCI-2	<p>この装置は、第二種情報装置（住宅地域又はその隣接した地域において使用されるべき情報装置）、で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。</p> <p>しかし、本装置をラジオ、テレビジョン受信機に近接してご使用になると、受信障害の原因となることがあります。</p> <p>取扱説明書に従って正しい取り扱いをして下さい。</p>

Declaration of conformity

DECLARATION OF CONFORMITY

according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company

Manufacturer's Address: 16399 West Bernardo Drive
San Diego, California U.S.A. 92127

declares that the product

Product Name: HP DeskJet 1600C and HP DeskJet 1600CM

Model Number: C3540A and C3541A

Product Options: C3543A Optional 500-Sheet Lower Tray Assembly
HP JetDirect Print Servers:
J2550A*, J2552A*, J2555A*

conforms to the following Product Specifications:

Safety: EN60950 (1992) / UL1950 (1993) / CSA 22.2 No. 950 (1993)
NOM-019-SCFI-1993 / IEC 950+A1 (1991) +A2 (1993)
EMKO TSE(74SEC) 207/94

EMC: EN 55022 (1988) / CISPR 22 (1993), Class B (1)
IEC 801-2 (1991)/prEN 55024-2 (1991), 3kV CD, 8kV AD
IEC 801-3 (1984)/prEN 55024-3 (1992), 3 V/m
IEC 801-4 (1988)/prEN 55024-4 (1992), 0.5kV SL, 1kV PL
FCC Part 15 Class B / DOC B / VCCI-2

Supplementary Information: *The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC, and carries the CE marking accordingly.*

(1) The product was tested with a Hewlett-Packard Vectra computer system and the Macintosh LC II computer system.

(2) * These options exhibit Class A operation.

European Contact: Your local Hewlett-Packard Sales and Support Office or Hewlett-Packard GmbH.
Department ZQ/Standards Europe, Herrenberger Strasse 130 D-71034 Boblingen (FAX +49-7031-14-3143)

Functional specifications

Feature	Specifications
Engine Speed (letter-size, text)*	
EconoFast print mode	9 pages per minute
Normal print mode	8 pages per minute
Presentation print mode	8 pages per minute
Engine Speed* (letter-size, mixed text and graphics)	
EconoFast print mode	4 pages per minute
Normal print mode	2 pages per minute
Presentation print mode	1 pages per minute
Engine Speed* (letter-size, full-page graphics)	
EconoFast print mode	2 pages per minute
Normal print mode	1 page per minute
Presentation print mode	1/2 page per minute
Transparency, glossy	1/3 page per minute
Printable width (8 inches)	80 characters at 10 cpi 96 characters at 12 cpi
Form feed rate	8 seconds per 11-inch page
Memory size (HP DeskJet 1600C)	4 megabytes expandable to 100 megabytes
(HP DeskJet 1600CM)	6 megabytes expandable to 72 megabytes
I/O	Centronics (bidirectional) Single slot for optional HP JetDirect Print Servers and 3rd-party interface cards.

*Actual speed varies by content of files and software application.

Specifications

Functional specifications, continued

Feature	Specifications
Paper sizes	Letter-size (8.5 by 11 in.) Legal-size (8.5 by 14 in.) A4-size (210 by 297 mm)
Paper weight (printer)	16 to 24 lb (60 to 90 g/m ²)
Paper weight (optional sheet feeder)	16 to 36 lb (60 to 135 g/m ²)
Label stock	LaserJet and DeskJet
Envelopes	U.S.: #10 International: DL and C5
Resolution	color: 300 by 300 dpi black: 600 by 600 dpi
Colors	Up to 16.8 million
Languages	PCL 5C and PostScript Level 2

Power specifications

Feature	Specifications
Source voltage	100 to 240 vac +/-10%
Frequency	50/60 Hz

Environmental specifications

Feature	Specifications
Operating ranges: (printer)	Mechanical & Electrical: 15° to 35°C at 20% to 80% RH
	With pens and media: 15° to 35°C at 20% to 80% RH
	Optimal print quality and media handling: 15° to 35°C at 20% to 80% RH
(print cartridges)	5° to 40°C
Non-operating ranges: (printer)	–40° to 70°C at 5% to 95% RH
(print cartridges)	–40° to 60°C

Physical specifications

Feature	Specifications
Height	11.25 in. (285.8 mm)
Width	20 in. (482.6 mm)
Depth	17.50 in. (444.5 mm) with tray 12.00 in. (304.8 mm) without tray
Weight	27 lb (12.25 kg)



Ordering Information



How to order HP DeskJet 1600C and 1600CM accessories and supplies

In the U.S. you may order printer accessories and supplies by calling HP Direct, 1-800-538-8787, to get the name of your local authorized HP dealer.

Outside the U.S. call your local authorized HP dealer.

Printer Accessories

Item	HP Part Number
PostScript Upgrade	C3542A
HP DeskJet 1600C Optional 500-sheet Paper Tray	C3543A
HP IEEE-1284 A-B Parallel Cable, 2m (Bidirectional Centronics interface cable)	C2950A
HP IEEE-1284 A-B Parallel Cable, 3m (Bidirectional Centronics interface cable)	C2951A
1 Mbyte SIMM memory	C3130A
2 Mbyte SIMM memory	C3131A
4 Mbyte SIMM memory	C3132A
8 Mbyte SIMM memory	C3133A
16 Mbyte SIMM memory	C3146A
32 MByte SIMM memory	D3578A

Printer Accessories, Continued

Item	HP Part Number
HP JetDirect Print Server Card (Ethernet with 10Base-T connector) for Novell NetWare, Microsoft LAN Manager, Windows for Workgroups, Windows NT, IBM LAN Server, Apple EtherTalk, and UNIX TCP/IP (HP-UX, SunOS, Solaris, SCO UNIX and IBM AIX).	J2550A
HP JetDirect Print Server Card (Ethernet with 10Base-T and BNC connectors) for Novell NetWare, Microsoft LAN Manager, Windows for Workgroups, Windows NT, IBM LAN Server, Apple EtherTalk, and UNIX TCP/IP (HP-UX, SunOS, Solaris, SCO UNIX, and IBM AIX). Also has LocalTalk connector.	J2552A
HP JetDirect Print Server Card (Token Ring with DB9 and RJ45 connectors) for Novell NetWare, Microsoft LAN Manager, Windows for Workgroups, Windows NT, IBM LAN Server and UNIX TCP/IP (HP-UX, SunOS, Solaris, SCO UNIX, and IBM AIX).	J2555A

Printer Accessories, continued

Item	HP Part Number
Print cartridge, black	51645A
Print cartridge, cyan	51640C
Print cartridge, magenta	51640M
Print cartridge, yellow	51640Y
HP Premium InkJet Paper, Letter (200 sheets, 8.5 by 11 in.)	51634Y
HP Premium InkJet Paper, A4 (200 sheets, 210 by 297 mm)	51634Z
HP Premium Glossy Paper, Letter (50 sheets, 8.5 by 11 in.)	C3836A
(10 sheets, 8.5 by 11 in.)	C3833A
HP Premium Glossy Paper, A4 (50 sheets, 210 by 297 mm)	C3837A
(10 sheets, 210 by 297 mm)	C3831A
HP Premium Transparency Film, Letter (50 sheets, 8.5 by 11 in.)	C3834A
(20 sheets, 8.5 by 11 in.)	C3828A
HP Premium Transparency Film, A4 (50 sheets, 210 by 297 mm)	C3835A
(20 sheets, 210 by 297 mm)	C3832A
Adhesive Labels (1 by 2.625 in)	92296A
Adhesive Labels (1.33 by 4 in)	92296B
Adhesive Labels (1 by 4 in)	92296C
Adhesive Labels (2 by 4 in)	92296D
Adhesive Labels (3.33 by 4 in)	92296E
Adhesive Labels (0.5 by 1.75 in)	92296F
Adhesive File Folder Labels (0.66 by 3.438 in)	92296G
Adhesive Labels (for 3.5-inch disks)	92296H
Adhesive Labels (for 5.25-inch disks)	92296J
Adhesive Labels (8.5 by 11 in)	92296K
LabelPro Software by Avery	92296S

Printer Accessories, Continued

Item	HP Part Number
HP DeskJet 1600C User's Guide	
English	C3540-90000
Spanish/French	C3540-90001
Swedish/Finnish	C3540-90002
German	C3540-90003
French	C3540-90004
Spanish/Italian	C3540-90005
Norwegian/Danish	C3540-90006
Japanese	C3540-90007
Dutch	C3540-90008
Portuguese	C3540-90009
Polish/Czech	C3540-90010
Hungarian/Turkish	C3540-90012
Traditional Chinese	C3540-90014
PCL document package (Includes: PCL 5 Printer Language Technical Reference Manual, PCL 5 Color Technical Reference Manual, PCL 5 Printer Language Technical Quick Reference Guide, and PCL 5 Comparison Guide)	33481-90969
Printer Job Language Technical Reference Manual	5961-0636

A

accessories, 8-4
adding memory, 2-10
adhesive labels, ordering, 8-4
air bubbles, 5-8
autosensing, 2-9

B

bidirectional interface cable, 1-21

C

cable, interface, 1-5, 1-21
cables, ordering, 8-2
capacity, memory, 2-10
cartridge, clearing, 5-8
cartridge selector, 2-3
cartridges, ink life, 3-15
Centronics, interconnection,
1-21-1-27
Centronics connector, 2-4
Check Paper light, 3-3, 5-3, 5-4
Check Print Cartridges light, 3-4
cleaning the printer, 5-18
clearing, 5-8

clearing cartridge nozzles, 5-11

ColorSmart, 2-7

conformance to safety and EMC
specifications, 7-4

Context Switching, 1-20

control panel, 2-12

control-panel software, 4-3

Customer Support Center, 5-20

D

Declaration of conformity, to
safety and EMC
specifications, 7-4

defaults, 1-19

DOC statement (Canada), 7-3

documentation, ordering, 8-2, 8-5

dust, 5-8

E

envelopes, 3-12

environmental conditions, 5-17

environmental specifications, 7-7

Ethernet connection, 1-22

EtherTalk connection

10Base-T, 1-25

BNC, 1-26

F

FCC statement (U.S.A.), 7-2
fingerprints on paper, 3-7
flashing light
 Check Paper, 3-3
 Check Print Cartridges, 3-4
 Manual Feed, 3-3
 Ready, 3-2
front-panel button, 2-2, 3-2, 3-4

G

Geräuschemission, 7-3
getting help, 5-19
glossy paper, 3-9

H

help line, 5-19
help symbols, 1-3
HP JetDirect Print Server,
 ordering, 8-3
HP JetDirect Print Servers, 2-8
HP Premium Paper, 3-5
HP Premium Transparency Film,
 3-5
HP-GL/2 language, 2-11

I

I/O autosensing, 2-9
incomplete printing, 2-10
ink-level indicator, 3-17
ink life, 3-15
ink sensing, 2-12
input paper tray, 2-2
input tray, installing, 1-11
Inspecting the printer, 1-5
installing memory, 6-2
installing paper trays, 1-9
installing print cartridges, 1-7
installing printer driver, 1-27
installing the optional paper tray,
 1-15
interface
 Centronics, 1-21–1-27
 LocalTalk, 1-23
 parallel. *See* Centronics
 PostScript Macintosh, 1-25
interface cable, 1-5
 connecting, 1-21
interface cards, 2-8
 ordering, 8-3
interface connectors, 2-4

J

jammed paper, clearing, 5-13

L

label stock, loading, 3-13

labels, ordering, 8-4

languages, 2-11

letter head, loading, 1-14

light indications, 5-4

lights

 Check Paper, 3-3

 Check Print Cartridges, 3-4

 Manual Feed, 3-3

 Ready, 3-2

loading envelopes, 3-12

loading paper, manual, 3-3

loading paper, 1-13, 3-6

loading print cartridges, 1-7

loading transparencies, 3-10

LocalTalk interface, 1-23

LocalTalk network connection,
 1-24

M

maintenance, 5-17

Manual Feed light, 3-3, 5-4

manual-feed slot, 2-2, 3-11

manual paper loading, 3-6

margins, 3-8

media tips, 3-7

memory, 2-10

 amount needed, 6-2

 installation, 6-2

 ordering, 8-5

Memory Enhancement

 technology (MEt), 1-19, 2-7

memory problems, 5-6

memory size, printer, 7-5

missing parts, 1-5

N

network interface cards, ordering,
 8-3

network protocols, 2-8

networked printer, 2-8

non-operating ranges, printer, 7-7

not enough printer memory, 2-10

O

On/Off button. 1-16, 2-2
operating ranges. printer. 7-7
optional paper tray. installing.
1-15
options. printer software. 4-2
ordering accessories. 8-2
out of ink
 indication. 3-4
 sensing. 3-17
out of ink sensing. 2-12
out of memory. 2-10
output paper tray. 2-2
output tray. installing. 1-12

P

Page Protection. 1-19, 2-10
paper. 3-5
 jam. 5-13
 loading. 1-13, 3-6
 ordering. 8-4
 printable area. 3-8
 sizes. 3-8
 types. 3-5
 weight range. 3-6
paper jam. 5-3
paper problems. 5-4, 5-13
paper trays
 identifying. 2-2
 installing. 1-9
 removing. 5-23
paper-width selector. 1-13, 2-2.
 3-11
papers to avoid. 3-7
peripheral management language
 (PML). 2-11
physical specifications. 7-7
 printer. 7-7
PostScript. installation. 6-2
PostScript language. 2-11
PostScript printer driver.
 installing. 1-27
PostScript problems. 5-7
power cord. 1-15
power socket. 2-4
power specifications. 7-6
print cartridge. ordering. 8-4
print cartridge problems. 5-8
print cartridges. installing. 1-7
print margins. 3-8
print quality
 problems. 5-5
 random streaks. 1-17
printable area. 3-8
printer
 identifying features. 2-2
 languages. 2-11
 operation problems. 5-4
 setup checklist. 1-4
 shipping. 5-22
 unpacking. 1-5

P (continued)

- printer control language
(PCL 5C), 2-11
- printer defaults, 1-19
- printer driver, installing, 1-27
- printer features, 2-5
- printer job language (PJL), 2-11
- printer memory, 6-2
- printer problems, checklist, 5-2
- printer software options, 4-2
- printer status, 4-5
- printer will not print, 5-2
- printing
 - consecutive pages, 3-3
 - glossy paper, 3-9
 - incomplete, 5-11
 - transparencies, 3-9
- printing a self test, 1-17
- printing labels, 3-13
- problems
 - checklist, 5-2
 - dust/air bubbles, 5-8
 - paper, 5-4
 - print cartridge, 5-8
 - troubleshooting table, 5-4

R

- Ready light, 3-2, 5-4
- regulatory notices, 7-2
- removing the paper trays, 5-23
- returning your printer, 5-22

S

- safety symbols, 1-2
- self test, 1-17, 5-8
- self-test data, 1-19
- self-test print out, 5-9
- setting up your printer, 1-4
- shared printer, 2-8
- shipping the printer, 5-22
- SIMM installation, 6-2
- software priority, 4-2
- software utilities
 - control panel, 2-12
 - status monitor, 2-12
- specifications, 7-5
- status monitor, 2-12, 4-5
- streaks in print job, 5-11
- supplies, 8-4
- support tray, installing, 1-10
- symbols, 1-2

T

Telecommunications General
Approval (U.K.). 7-3
throughput. 7-5
toner, caution. 3-5
top cover, 2-2
transparencies, loading, 3-10
transparency film. 3-9
troubleshooting checklist, 5-2
troubleshooting table. 5-4
TrueType typefaces. 2-9
typefaces, 2-9

U

unpacking the printer. 1-5
using the front panel. 3-2

V

VCCI-2, 7-3

W

Windows Status Monitor. 4-5

number

500-sheet tray connector. 2-4

HP Support Services

HP support services are listed below. Some services are available only in the U.S. and Canada, while others are available in many countries worldwide. If a number for support services is not available in this User's Guide for your country, contact your nearest authorized HP dealer for help.

HP Support Partners

Hewlett-Packard has invested in developing a partnership with your local computer dealers and service centers to ensure they have the training and know-how to get you the answers you need and the results you want. To locate your nearest authorized dealer or service center, phone 800-243-9816 (US) or 800-387-3867 (Canada).

HP Audio Tips/HP FIRST

Phone 800-333-1917 (U.S. and Canada) to access both of these 24-hour automated services. HP Audio Tips provides pre-recorded help messages for common questions and print problems. Information can also be faxed to you by using HP FIRST. You can access HP FIRST from a touch-tone, 9600-baud, Group 3 facsimile machine. Hewlett-Packard offers this service free of charge.

United Kingdom	0-800-96-02-71
Netherlands	06-02-22-420
Belgium	078-11-19-06
Belgium (French)	078-11-70-43
Germany	0130-8100-61
France	05-90-5900
Switzerland (German)	155-1527
Switzerland (French)	155-1526
English outside of U.K.	(31) 20-681-5792
United States and Canada	(800) 333-1917
Australia	(61-3) 272 2627
Korea	(82-2) 769 0543
Singapore	(65) 291 7951
Hong Kong	(852) 506 2422
Taiwan	(886-2) 717 9609

HP Download Service

In the U.S., printer software and support information are available 24 hours a day. Using your modem, phone 208-344-1691.

CompuServe

Printer drivers, support information, and interactive sharing of technical information are available on CompuServe's HP Peripherals forum (GO HPPER) world wide. To subscribe, call CompuServe, Inc. at 800-848-8199 and ask for representative #51. (NOTE: This service is not operated by HP).

Internet

Printer drivers and support information can be obtained from HP's anonymous FTP site at 192.6.71.2 or <ftp-boi.external.hp.com> which is available to anyone with FTP access to the Internet.

HP Distribution Center

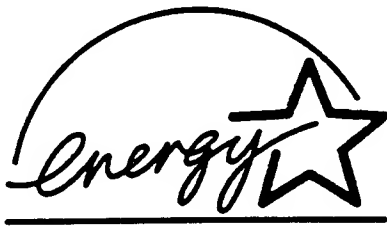
To order current printer software for many HP peripheral products in the U.S., phone 303-339-7009 Monday through Saturday, 24 hours per day, closed Sundays.

In Europe, dial the number below for the language listed:

English	+44 (0) 429 865 511
French	+44 (0) 429 863 343
German	+44 (0) 429 863 353
Italian	+44 (0) 429 520 013
Spanish	+44 (0) 429 520 012

Warranty and After-Warranty Support

Refer to Chapter 5 (Troubleshooting) of this User's Guide or the Warranty Information booklet for technical support from HP's Customer Support Centers (CSC).

**EPA Pollution Preventer**

As an Energy Star Partner, HP has determined that this product meets the Energy Star guidelines for energy efficiency.



All materials used to produce this manual are recyclable. Use local laws and guidelines to recycle this manual.

Copyright © 1995
Hewlett-Packard Company
Printed in USA 5/95

Manual Part Number
C3540-90000

